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THE FUTURE OF SCHOOLS OF PUBLIC HEALTH

HEARING

BEFORE THE

COMMITTEE ON
LABOR AND HUMAN RESOURCES
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

ON

EXAMINING THE FUTURE OF SCHOOLS OF PUBLIC HEALTH

APRIL 24, 1990

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THE FUTURE OF SCHOOLS OF PUBLIC HEALTH

TUESDAY, APRIL 24, 1990

U.S. Senate,
Committee on Labor and Human Resources,
Washington, DC.

The committee met, pursuant to notice, at 2:09 p.m., in room SD-430, Dirksen Senate Office Building, Senator Dave Durenberger presiding.

Present: Senator Durenberger.

Opening Statement of Senator Durenberger

Senator **Durenberger**. Good afternoon. It is my pleasure to welcome everyone, especially the deans and faculty and staff of our schools of public health who are here on the occasion of your 50th annual meeting in the Nation's capital.

I also want to thank the staff of the Association of the Schools of Public Health for their assistance in coordinating this hearing, in particular, the executive director, Mike Gemmell and his assistant, Joan Piculel, all of whom were extremely helpful.

It is my special pleasure to hear testimony today from the deans of 8 of our country's 24 schools of public health: Dean Robert Kane from the University of Minnesota; Dean Palmer Beasley from the University of Texas; Dean Jacob Brody from the University of Illinois at Chicago; Dean Harvey Fineberg from Harvard; Dean Jerrold Michael from the University of Hawaii; Dean June Osborn from the University of Michigan; Dean Winona Vernberg of the University of South Carolina; and Dean Donald Henderson of the Johns Hopkins University, who is also president of the Association.

I think we have asked that your testimony be summarized in five minutes, which is the usual rule in the Senate, and all of the written testimony and the additional comments that anybody may want to make part of this record will be or can be submitted for the record.

I have invited several of my colleagues in the Senate to join me as their schedules permit. They also may wish to ask questions after the testimony. What we intend to do is go through all of the testimony before we ask questions.

I explained to some of you that both of the Democratic and Republican caucuses today are taken up with campaign finance reform, and since that is the lifeblood for many Senators, it seems to be difficult to break them away readily. And so I am not sure how many people are going to be here. We also have a roll call vote that is currently scheduled for 3 o'clock on the trade bill, and I will have to absent myself briefly at that point in time also.

I would like you to know that I for one have a great deal of respect for the work that our Nation's schools of public health do. I am obviously proud of my own, and I am proud of the fact that, as chairman of the Health Subcommittee on a different committee, the Finance Committee, when we were in the majority I spent a lot of time finding Minnesota grads all over the country, as a matter of fact. And so I come from that particular perspective. But in the 10 years or 11 years now that I have spent in the Finance Committee and the 1½years that I have spent here in the Labor and Human Resources Committee, it has been a source of great strength to me to visit with the graduates as well as the deans and the faculty of our schools of public health.

This Nation does not and has not defined its national policies broadly enough, and so if anyone wonders why we spend $600 or $700 billion a year on medical services and very little on health, and why we lack access for everybody into the system, it is because most of us have not been listening to the people that are here today for too long a period of time. It seems to me that that has changed and should be a reward to those of you who have labored in these vineyards, whether you are Minnesota graduates or not, who have labored in these vineyards for so many years.

I might also say that the other evening—in fact, it was a Saturday evening—I was in my home town for a statewide meeting of a very large organization, and a woman berated me because I had not changed the Medicare system to include mammograms and colonoscopy and all kinds of stuff that she thought—all the preventive stuff that should be in Medicare. And I said I am really very sorry about that, but it is not for want of trying. It is for want or lack of support in this country to do the kinds of preventive things that we need in our system. But I think largely it is our definition of health that we all need to work on, and it is with the people who are here before us today whose schools, whose records in vital areas of research, demonstration, and commission work like AIDS, disease prevention, control techniques, a variety of things today. We marked up the first national indoor air pollution bill. You people have been giving us opportunities to do indoor air for a long time. And finally we get around to it in the Environment and Public Works Committee down the hall. Finally, we are going to have a national indoor air act.

Long-term care issues were so dependent on you, in your collective and in your individual capacities for advice on how to deal with the long-term care issues that plague the people of this country.

So maybe today, and maybe the coincidence of the 50th anniversary and so forth, maybe today hopefully we will remember as one of those times in 1990, sort of the beginning of a new administration and sort of a new time in this country, that 8 of the deans of the 24 schools got together, shared some of their thought with us, and from this day forward maybe things will be done differently.

I submitted this morning a Senate resolution commemorating your individual and collective achievements as well. So hopefully we will pass that, but at least we introduced it today and had a number of cosponsors on it. That added recognition of the work I hope will be helpful to all of us in the future.

We will now receive a statement for the record by Senator Harkin.

[The opening statement of Senator Harkin follows:]

OPENING STATEMENT OF SENATOR HARKIN

Senator **HARKIN**. I am pleased to join with you, Mr. Chairman, in welcoming the representatives from 8 of the 24 schools of public health in the United States. Also, I would like to commend you for calling today's hearing on the contributions of schools of public health to disease prevention and health promotion. As the chairman of the Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies, which is responsible for providing the funds to assist schools of public health, I am especially interested in today's hearing.

Mr. Chairman, as you well know, disease prevention and health promotion are the best ways to improve the health of our Nation's populace and to ensure a cost-effective health care system. I am sure you share my sentiments that it is important for the Federal Government to continue its support of the work and research being done by schools of public health in this capacity. I look forward to working with you, Mr. Chairman, and the members of the committee by doing what I can to assure that such vital support is continued. I also applaud those of you here today for all of the work you have done, and I thank you for taking the time to come to Washington to share your accomplishments.

Thank you.

Senator **DURENBERGER**. Let me begin now with the introduction of our first witness, a distinguished researcher and a personal friend. Before taking the deanship of the School of Public Health in my home State of Minnesota, Bob Kane was a senior researcher at the Rand Corporation and a professor at UCLA. Bob has contributed to the improved care of the elderly in many ways. He has directed major studies and assessments from both national and international perspectives, served as a consultant to the National Institute on Aging, National Center for Health Services Research, the Institute of Medicine, and the World Health Organization. I am particularly proud that he also sits on my Minnesota Committee on Long-Term Care. So we will begin by welcoming Bob Kane, and we will look forward to your comments on long-term care.

STATEMENTS OF ROBERT L. KANE, M.D., DEAN, SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF MINNESOTA; R. PALMER BEASLEY, M.D., DEAN, SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF TEXAS; JACOB A. BRODY, M.D., DEAN SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF ILLINOIS AT CHICAGO; HARVEY V. FINEBERG, M.D., DEAN, SCHOOL OF PUBLIC HEALTH, HARVARD UNIVERSITY; JERROLD M. MICHAEL, SCD., Ph.D., DEAN AND PROFESSOR OF PUBLIC HEALTH, SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF HAWAII; JUNE E. OSBORN, DEAN, SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF MICHIGAN; WINONA B. VERNBERG, Ph.D., DEAN, SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF SOUTH CAROLINA; DONALD A. HENDERSON, M.D., M.P.H., DEAN, SCHOOL OF HYGIENE AND PUBLIC HEALTH, JOHNS HOPKINS UNIVERSITY, AND PRESIDENT, ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH

Dr. KANE. Thank you very much, Senator. I certainly would like to thank you for holding this hearing and also for all the work that you have done on behalf of the elderly, particularly the recent efforts that you have done on the Pepper Commission. It is particularly appropriate, I think, that I am here to talk today about what the schools of public health have done in the area of long-term care and aging.

Public health has historically been concerned with the health of population groups, especially those most disadvantaged. While traditionally it has addressed the special needs of children, as a group at high risk, the recent demographic pressures have encouraged attention to the elderly, especially those who are disabled. This group is often defined by their need for long-term care. Concern about long-term care is a recent phenomenon. With growing numbers of older persons living to older ages, the prevalence of disability has increased. Although we might hope to see a gain in disability-free years, the current evidence—some of which has been analyzed by public health scholars—seems to suggest that, at least for the present, much of that gain in adult life expectancy has been in disabled years.

The pressures of the expanding numbers of disabled older persons has forced our Nation to reconsider its approach to their care. Until recently, the health care system has been dominated by concerns about acute care. Although it would be misleading to suggest that this focus has shifted, there is a growing appreciation that a social and medical service system that addresses chronic needs is also required.

Social policy around financing health care has moved faster for the elderly than with the rest of our society. The passage of Medicare provided some security for older persons against the high costs of health care. Now attention has turned to the costs of long-term care, which represents a major catastrophe for many older persons. Indeed, the recent furor over the Catastrophic Coverage Act revealed that older persons were not content to see more of their resources going to acute care while their long-term care expenses remained uncovered.

Public health plays an important role in several areas of long-term care. Researchers in schools of public health have been working to study and improve the system for delivering and financing this area of care. Many of the basic skills of public health have been turned to the problems surrounding the care of older persons—specifically, epidemiology, prevention, and health services research.

In addition, public health has long been concerned with preparing administrators for health care programs. In recent years, these health administration training programs have begun to devote increased attention to the preparation of professionals to lead the myriad of programs emerging to respond to the care needs of disabled persons.

Epidemiologic studies have begun to show that the proportion of older persons who are disabled is more variable than has been previously believed. Longitudinal data bases have revealed that, contrary to popular belief, disability is not necessarily a terminal condition; there is considerable flux in the disability levels of older persons. Longitudinal data is also providing useful information to understand better the nature of health care utilization patterns and the relationship between use of acute and chronic care.

Schools of public health are actively engaged in epidemiologic research to ascertain the causes of the complex chronic problems that disable older persons and to find ways to intervene effectively. The University of Minnesota is engaged in a cooperative study to assess the risk factors for hip fractures. The University of Washington is coordinating a major study on the risk factors for stroke and heart disease. The University of Illinois has been active in the study of dementia, including developing a national standardized patient registry for all the dementia research centers in the country. The University of South Carolina has developed a statewide registry for dementia patients. Yale's Department of Epidemiology and Public Health directs one of the four national centers for Established Populations for Epidemiologic Studies of the Elderly, which provides valuable longitudinal data on a community sample of older persons. Researchers at Berkeley work with data from the Alameda County study to look at similar longitudinal issues, which relate health risk factors to disease onset and subsequent health care utilization. University of Michigan researchers are engaged in cross-national studies to identify factors that are common and distinct among different countries in an effort to distill the general principles of aging and to separate those aspects that may be mutable. Loma Linda investigators have successfully used a unique data base of Seventh Day Adventists to seek clues to age-related changes that are independent of dietary and other healthy practices.

Several schools of public health are involved in efforts directed at health promotion for older persons. The University of Washington has a grant from the Centers of Disease Control to focus specifically on health promotion issues among older persons. UCLA has a grant from the Health Care Financing Administration to develop a model for providing a broader range of preventive services under Medicare. The University of Alabama at Birmingham is developing a health risk assessment program specifically designed for older persons. The University of Michigan is conducting research in health promotion.

One could go on with a long list of activities where research in schools of public health are making important contributions in shaping the agenda. At the same time, many of the schools of public health have developed numerous courses specially designed to address the problems of aging and its relationship to health. Almost half of the 24 schools of public health in this country offer specific course work on aging. Two offer special graduate certificates in gerontology, but the rest prepare students in a variety of disciplines for work with older persons. Primary areas of attention for formal teaching have been health promotion among the elderly and the financing of the health care system.

In summary, as public attention has come to appreciate the importance of finding better ways to meet the challenges of an aging America, schools of public health have been on the forefront. They have provided both research and evaluation of existing programs and much of the data on which to examine policy options. Their breadth of focus, coupled with their epidemiologic perspective, have made them the likely sources for ongoing intellectual and empirical efforts toward improving the lives of older persons. They will continue to serve as major training resources for the variety of health professionals who will need to have a solid ground in aging-related issues. By drawing a population-based perspective, public health can provide leadership and insight into what really makes a difference in this hitherto much neglected field.

Thank you very much.

Senator **Durenberger**. Thank you, Bob, very much. You don't get penalized if you don't go more than a minute beyond the red light. We do not have electric chairs. Nothing bad will happen to anybody unless you start wandering in some fashion. And I am sure that is not going to happen today.

The next witness is Dean Palmer Beasley, and he is from the University of Texas. Dr. Beasley serves concurrently as the director of the American University Medical Center in Taiwan. Dr. Beasley is well known for his work on the causal relationship between hepatitis B and liver cancer and contributed to the development of a vaccine for hepatitis B. We look forward to your update, Dr. Beasley, on disease prevention and immunization.

Dr. **Beasley**. Thank you very much, Senator.

Disease prevention and health promotion are the fundamental missions of public health. It is a mission shared by other health professionals, but it is the basic and fundamental purpose of public health to keep as many people as healthy as possible for as long as possible. Most of the medical profession is dedicated to the treatment of disease. We in public health are dedicated to the prevention of disease before it occurs. Nobody wants to be sick, so prevention has intrinsic appeal and makes good common sense. But there is another enormous appeal beyond that, which is that prevention is cheap. Prevention is very, very cheap. Terrible, devastating, crippling, and fatal diseases can be prevented with only a few dollars per person. Let me give you some examples.

I will begin with poliomyelitis, a disease that only a few decades ago was common in the United States. It is well known that Franklin Roosevelt was crippled by polio while in office. Only a few years later, a superb vaccine became available, and I think all of us know the story that has evolved to the point where now it has been almost 10 years since polio occurred in the United States, and polio is on the verge of eradication within the Americas, and that the World Health Organization has declared polio potentially an eradicable disease from the entire world.

Polio is only one of the numerous diseases which are effectively and safety prevented by vaccination. Other examples include smallpox, yellow fever, measles, tetanus, diphtheria, whooping cough, rabies, German measles, mumps, and now hepatitis B. I will return to vaccination in a moment, but I would like to mention some other familiar ways in which diseases are prevented. Through America and Europe, we drink water from municipal water systems without fear of disease because it had been treated with such a simple chemical as chlorine. Food hygiene has been established such that we can eat out generally, safely, and without fear. Pasteurized milk no longer transmits brucellosis and tuberculosis. And now, with laws in effect, toxic waste control and the clean air bill, for which we all commend the Congress, we have other ways to deal with disease prevention.

Such diseases as pellagra, scurvy, rickets, beriberi, and kwashiorkor all have an exotic sound since it has been so long since they have occurred in the United States. And nutritional diseases are now ones we are primarily concerned with of nutritional excess rather than nutritional deficiency. But it is heartening that heart disease, the leading cause of death in Americans, has been on a steady decline for more than a decade.

I haven't yet spoken of smallpox, the very best success story in all of public health. Smallpox is the very definition of success in disease prevention because it has been totally eradicated from the face of the earth. The father of the program that did that, Dean Henderson, is with us today, and it is because of his efforts through the World Health Organization that we not only no longer have that problem, but we no longer need to have the programs for prevention to maintain the absence of smallpox. There is no need for anything any more. All of the costs are gone.

Prevention of disease by vaccination is one of the greatest success stories of public health and preventive medicine. Not only has smallpox been eradicated from the world, polio on the verge of eradication from the Americans, but diphtheria, tetanus, whopping cough and cases of congenital defects from rubella are at very low levels in the United States. There have been reductions of 90 percent or more in the reported incidence of all these diseases.

I would like to mention the newest of this panoply of vaccines against killer diseases. Very recently, and for the first time ever, there is a vaccine against a human cancer. Hepatitis B vaccine against the hepatitis B virus is, in fact, a vaccine against primary liver cancer, one of the world's most common cancers. Liver cancer develops in adults from infections that occur arising in infancy and childhood. Thus, we have a vaccine that must be given to children to prevent cancer in adults. Although it will take many years, as it did with smallpox and polio, hepatitis B is an eradicable disease. Sadly, I must tell you that while the vaccine is an American product and one of the few vaccines still manufactured in the United States, we in the United States are not leaders in the use of hepatitis vaccine. Public health leaders, including experts at CDC, have developed sound plans for an American immunization program against hepatitis B, but there has been a lack of political leadership to provide the funding. Ironically, the cost of only a few liver transplants would finance the entire immunization program. Thus, once again, the effective dollars should be spent on prevention, preferentially to the end stage of disease.

Thank you very much.

[The prepared statement of Dr. Beasley follows:]

Prepared Statement of R. Palmer Beasley, M.D.

Disease prevention and health promotion is the fundamental mission of public health. It is a mission shared by other health professions but it is the basic and fundamental purpose of public health to keep as many people as healthy as possible for a long as possible. Most of the medical profession is dedicated to the treatment of disease. We in public health are dedicated to the prevention of disease before it occurs. Nobody wants to be sick, so prevention has intrinsic appeal and make good common sense. But there is another enormous appeal - prevention is cheap. Prevention is very very cheap. Terrible, devastating, crippling and fatal diseases can be prevented with only a few dollars per person. Let me give you some examples.

I will begin with poliomyelitis, disease that only several decades ago was common in America. It is well known that Franklin Roosevelt's was crippled by polio while in office. I had polio as a child but I was more fortunate because the encephalitis which almost killed me, did not leave me with permanent damage. Only a few years later a superb vaccine was found and polio began to come under control. With government funds public health workers set about immunizing the population. Case numbers fell rapidly at first, but there seemed to be a stubborn residual. More was learned, vaccine schedules and programs were revised and polio continued to wane. It has now been approximately ten years since a documented case of wild type polio occurred in the United States and vigorous vaccination programs in other countries has been accompanied by a dramatic worldwide decline. The World Health Organization estimates that 355,000 cases of polio have been prevented. One of

Polio is only one of the numerous diseases which are effectively and safely prevented by vaccination. Other examples include smallpox, yellow fever, measles, tetanus, diphtheria, whooping cough, rabies, German measles, mumps, and hepatitis B. I will return to vaccination in a moment but I would like to mention some of the other familiar ways in which diseases are prevented. Throughout America and Europe we drink water from municipal water systems without fear of disease because it has been treated chlorine. Water is so safe that few people dwell on the well documented epidemics of diseases such as hepatitis and salmonellosis which in the past which have affected tens to hundreds of thousands of persons. Long established food hygiene techniques allow us to eat publicly prepared food with little fear of illness. Knowledge of how to safely can food has made botulism a disease of the past. Milk used to be a source of brucellosis and tuberculosis but today milk, butter, ice-cream etc can be safely consumed throughout our country.

Another success story of public health has given children and adults today far better teeth than any generation of people ever before. Brush your teeth and drink your community fluoridated water and the result is that we don't need as many dentists today as we used to.

Pellagra, scurvy, rickets, beriberi, and kwashiorkor are diseases whose names have an exotic sound to most Americans because it has been so long since they were problems in the United States. Yet pellagra was once so common that it was thought to be an infectious disease. Proper nutrition and a adequate vitamins keep us from getting these diseases. Much more common today are the diseases associated with nutritional excess. Public health scientists have made substantial progress in understanding the dietary contributions to the cause of coronary heart disease, stroke and some cancers. America's leading cause of death, coronary heart disease, has been progressively declining for over a decade.

Tuberculosis has always been one of the world's leading killer diseases and it continues to be a problem in the poverty areas of our inner cities. Nonetheless, TB in the United States has been on a steady, progressive downward course since the turn of the century.

In many parts of the world malaria, not heart disease, is the leading cause of death. Malaria, yellow fever and bubonic plague are all insect transmitted diseases, now under control, which were once important problems in the United States. Like polio, malaria and yellow fever had been eradicated from our country.

I haven't yet spoken of smallpox, the best success story in public health. Smallpox is the very definition of success in disease prevention because it has been totally eradicated from the face of earth. Because it is totally gone we no longer have the loss of human life, suffering and medical expenses of caring for those afflicted, we don't even have to pay for on going prevention. No more smallpox vaccinations - nothing; smallpox is gone forever. Eradication can also be achieved in the for polio and perhaps for measles.

Prevention of disease by vaccination is one of the greatest success stories of public health and preventive medicine. Not only has smallpox been eradicated from the world, polio on the verge of eradication from the Americas, but diphtheria, tetanus, whooping cough and cases of congenital defects from rubella (German measles) are at very low levels in the United States. There has been reductions of 90% or more in the reported incidence of all of these diseases. Even though the measles cases reported in 1989-90 represent the largest numbers since 1978, it is worthwhile remembering that the totals are less than 2% of the peak numbers in pre-vaccine years.

It is not well appreciated in the United States that the rest of the world is also making dramatic progress in the prevention of the immunizable diseases of childhood (polio, DPT, and measles). With strong support and leadership from the United States, the World Health Organization has been helping countries around the world to immunize their children. In the late 1970s only about 5% of the infants in the world were receiving these cheap, "routine" vaccines. By the end of last year, an almost unbelievably high 66% of all infants in the developing countries of the year world were receiving a full three dose course of DPT and polio vaccines and 59% were receiving measles vaccine.

I'd like to mention the newest of this panoply of vaccines against killer diseases. Very recently, and for the first time ever, there is a vaccine against a human cancer. Hepatitis B vaccine against the hepatitis B virus is in fact a vaccine against primary liver cancer, one of the world's most common cancers. Liver cancer develops in adults from infections usually arising in infancy and childhood. Thus we have a vaccine that must be given to children to prevent cancer in adults. Although it will take many years, as it did with smallpox and polio, hepatitis B is an eradicatable disease. Sadly, I must tell you that while the vaccine is an American product, we in the United States are not leaders in the use of hepatitis B vaccine. Public health leaders, including experts at CDC, have developed sound plans for an

American immunization program against hepatitis B but there has been a lack of political leadership to provide the funding. Ironically, the cost of only a few liver transplants would finance the entire immunization program!

These and other disease prevention efforts are causing declines in infant and childhood mortality and thus prolonged average life expectancy. While the immediate effect is continued expansion of our burgeoning world population. We in public health are however heartened because we see childhood survival as the necessary step to the achievement of widespread family planning, population stabilization and the protection of the natural resources in this precious earth of ours.

Senator **Durenberger**. Thank you very much.

Our next witness is Dean Jacob Brody of the University of Illinois at Chicago. I know Paul Simon wanted to be here, and I know Paul would have loved to have formally introduced him. In his absence, we will have a statement for the record.

Prior to his deanship, Dr. Brody was an associate director at the National Institute on Aging. He is well known for his understanding of health and disease in aging populations. I wish more of us were.

Dr. Brody, I look forward to your update. Everybody has a title for their presentation, as I see here, and yours is clinical aspects of public health. Thank you for being here.

Dr. **Brody**. Mr. Chairman, the role of public health has increased enormously in the last two decades because of Federal, State, and local expenditures on health and health-related matters. In addition to traditional public health, we now must relate to such topics as access to health care, aging, the homeless, and health care costs for Medicare and Medicaid and other publicly funded programs. Our focus has been broadened to include AIDS, disability, substance abuse, and the interaction between health and the environment. These new public health challenges come in the face of the Institute of Medicine's report on "The Future of Public Health," which admonishes that "public health is in disarray."

In Illinois, we have attempted to evolve a comprehensive approach to disarray using clinical public health to forge needed alliances with the School of Public Health, the Illinois Public Health Association, the Illinois Department of Health, and the Chicago Department of Health. Our program is to extend the walls of the academic schools of public health to encompass the needs of health agencies in addressing the huge and changing role of public health practice. To this end, we have developed a clinical public health practice program.

A series of initiatives are in place or coming on line. We are beginning to train public health practitioners by having practicing health officials serve as teachers and models for our students. We have a commitment from the director of public health of the Illinois Department of Public Health and the acting Commissioner of the Department of Health of Chicago to supply one faculty member each to the School of Public Health. The University of Illinois at Chicago has provided funds for the clinical director of public health practice. The total faculty for the program will be five professionals, two or more of whom will rotate for one or two years from one of the major city, county, or State health agencies. Faculty from the School of Public Health will also rotate to these public health agencies. Internships to provide practical learning experiences are being organized in public health agencies which will be required for our students at the School of Public Health.

One of our first steps to was to develop a needs assessment questionnaire for State and local public health offices in Illinois. A total in excess of 5,000 questionnaires was sent, and in certain key areas, such as State and city health offices, our response rate approaches 50 percent. Thus, we will determine the perceived needs within Illinois.

We have initiated two annually recurring courses at the School of Public Health which address critical Illinois public health problems. The courses will change each year in terms of public health needs and be taught by School of Public Health faculty and community leaders and practitioners. Courses on State and local health department organization, history, and mission are taught. We are implementing a program to train area public health leaders to become continuing education coordinators in their home communities. We also offer nontraditional training programs in additional to our routine course work, which include weekend and evening courses, summer programs, extension courses, and continuing education courses primarily targeted at the specific needs of individuals and departments, rather than for the pursuit of a Master's degree in public health. Finally, with agency leaders, we have developed a consortium to serve as consultants on implementation of public health practice services. This group will be used to provide technical assistance and guidance throughout Illinois.

Thank you.

[The prepared statement of Dr. Brody follows:]

Prepared Statement of Jacob A. Brody, M.D.

Mr. Chairman and Members of the Committee. My name is Jacob A. Brody, M.D., and I am Dean of the School of Public Health at the University of Illinois at Chicago which is the only school of public health in the State of Illinois. The role of public health has increased enormously in the last two decades because of federal, state, and local expenditures on health and health related matters. In addition to traditional public health, we now must relate to such topics as access to health care, aging, the homeless, and health care costs for Medicare and Medicaid expenditures and other publically funded programs. Our focus has been broadened to include AIDS, disability, substance abuse, and the interaction between health and the environment. These new public health challenges come in the face of the Institute of Medicine's Report on The Future of Public Health which admonishes that "public health is in disarray".

In Illinois, we have attempted to evolve a comprehensive approach to "disarray" using Clinical Public Health to forge needed alliances with the School of Public Health, the Illinois Public Health Association, the Illinois Department of Health, and the Chicago Department of Health (Appendix). Our program is to extend the walls of the academic school of public health to encompass the needs of health agencies in addressing the huge and changing role of public health practice. Many educational paths can lead to careers in public health. However, the most direct educational path is to obtain a degree from a school of public health usually a Master's in Public Health (M.P.H.). The two dozen or so schools of public health in the United States are located in research universities and thus have a dual responsibility to academic excellence and to produce well-trained professional practitioners. These dual roles are not easy to balance and there is a tendency, based on the financial and academic reward system, for schools to become isolated from public health practice while emphasizing their scholarly missions. At the same time, most public health workers have no formal training in public health and their need for basic grounding may not be suitably met by degree programs which are more appropriate to prepare people for the middle and upper level health positions.

Traditionally, the School of Public Health at the University of Illinois at Chicago has had a close working relationships with State, County and City health professionals, but we lacked a systematic program of collaboration between our schools and those directly responsible for public health efforts at the state and local level. We, therefore, have developed a clinical public health practice program to remediate this situation. We are beginning to train public health practitioners by having practicing health officials serve as teachers and models for our students. One of our first steps was to develop a needs assessment questionnaire for State and local public health officials in Illinois. A total in excess of 5,000 questionnaires was sent out and in certain key areas, such as state and city health offices, our response rate has been well over 50%. Thus, we will determine the perceived needs within Illinois.

A series of initiatives are in place or coming on line. We have a commitment from the Director of Public Health of the Illinois Department of Public Health and the Acting Commissioner of the Department of Health of Chicago to support one faculty member each at the School of Public Health (Appendix). The University of Illinois at Chicago has provided funds for the Clinical Director of Public Health Practice. The total faculty for the program will be five professionals, two or more of whom will rotate for one or two years from one of the major city, county, or state health agencies. Faculty from the School of Public Health will also rotate to these public health agencies. Internships to provide practical learning experiences are being organized by public health agencies which will be required for our students at the School of Public Health.

We have initiated two annually recurring courses at the School of Public Health which address critical Illinois public health problems. The courses will change each year in terms of public health needs and be taught by School of Public Health faculty and community leaders and practitioners. Courses on State and local health department organization, history and mission are taught. We have initiated a bi-annual program to discuss common health practices called the Illinois Public Health Partnership Program. We are implementing a program to train area public health leaders to become continuing education coordinators in their home communities. We also offer non-traditional training programs in addition to our routine coursework which include weekend and evening courses, summer programs, extension courses, and continuing education courses primarily targeted at specific needs of individuals and departments, rather than for pursuit of a Masters of Public Health. Finally, with agency leaders, we have developed a consortium to serve as consultants on implementation of public health practice services. This group will be used to provide technical assistance and guidance throughout Illinois.

APPENDIX

Clinical Teaching Track for Public Health Practice in the School of Public Health Analogous to the Clinical Teaching Track in the College of Medicine, UIC, July 28, 1989

Drs. Jacob A. Brody, Marianne Svanborg and Louis Rowitz
School of Public Health
University of Illinois at Chicago

The Institute of Medicine report on The Future of Public Health that was first published in August 1988, was issued with the admonition that "public health is in disarray". Various organizations including the Association of Schools of Public Health, the Illinois Public Health Association, the American Public Health Association, the Illinois Department of Health, the Chicago Department of Health and the School of Public Health of the University of Illinois at Chicago are addressing aspects of this report.

Many educational paths can lead to careers in public health. However, the most direct educational path is to obtain a degree from a school of public health. The 24 schools of public health in the United States are located in research universities and thus have a dual responsibility to academic excellence and to produce well trained professional practitioners. These dual roles are not easy to balance and there is a tendency for schools to become isolated from public health practice while emphasizing their academic missions. In addition, most public health workers have no formal training in public health, and their need for basic grounding may not be suitably met by degree programs appropriate to prepare people for middle-and-upper level positions.

Traditionally, the School of Public Health at the UIC has had close relations with State and City health professionals, but we lack a systematic program of collaboration between our school and those directly responsible for public health efforts at the state and local level. The Public Health Practice Tract will help to remediate this situation. We will train public health practitioners by having health officials serve as teachers and models for our students.

To elicit the key public health issues in Illinois as defined by public health professionals, we designed a "Needs Assessment Questionnaire for State and Local Public Health Officials in Illinois". The needs assessment will be undertaken in the Fall of 1989.

The initial steps and directions involved in establishing a Clinical Teaching Tract for Public Health Practice are:

1. Recruitment of public health practitioners, some permanent and some rotating from City, County, and State agencies, to the Clinical Public Health Teaching Tract.

2. Development of two recurring courses in the School of Public Health on public health practice. Each offering of the two course sequence would address a critical Illinois public health problem. School of Public Health faculty and public health community leaders would be the teachers in this program.

3. Development of a recurring course on the Illinois state and local health department systems.

4. Development of a mechanism throughout the State to define and discuss common public health issues, called the Illinois Public Health Partnership Program.

5. Development of a program by the School of Public Health to train community public health leaders to become continuing education coordinators in their home communities.

6. Exploration of research partnerships between the School of Public Health and state and local agencies.

7. Identification of School of Public Health faculty for possible technical assistance roles with public health agencies.

8. Development of a non-traditional training program (in addition to traditional educational programs) which will include weekend and evening programs, summer programs, extension programs, etc.

9. Exploration, development, and implementation of a Public Health Practice Service Plan. This plan will involve special contracts with agencies, training grants, technical assistance, etc., and will become a source of revenue for the School of Public Health.

BUDGET

The staff would consist of 2 FTE permanent positions, a Clinical Director and a faculty member, plus 4 FTE rotating 1-2 years positions, and 1 administrative assistant and 1 administrative secretary.

One FTE-rotating position will be assigned to each of the School of Public Health's four Program Areas (Community Health Sciences, Environmental and Occupational Health Sciences, Epidemiology and Biometry, Health Resources Management) in order to permit expansion of evening and non-traditional teaching in public health practice.

BUDGET*

YEAR		
1	2	3
Program Director $ 80,000	+ 2 FTE Rotating @ 75,000 (150,000)	+ 2 FTE Rotating @ 75,000 (150,000)
1 Faculty Person $ 60,000		
1 Admin. Assist. $ 25,000		
1 Admin. Sec. $ 20,000		
Operating budget for training materials, travel, etc. $ 30,000		
TOTAL $215,000	$150,000	$150,000

*Provision for rental space not included.

September 18, 1989

Jacob A. Brody, M.D.
Dean, School of Public Health
University of Illinois at Chicago
Box 6998
Chicago, Illinois 60680

Dear ~~Dr. Brody~~ Jacob:

Thank you for the opportunity to discuss with you and Dr. Krieg the proposed Public Health Practice Clinical Teaching Track for the University of Illinois School of Public Health. As I noted at our meeting, I am most enthusiastic about this proposal and hopeful that you can find a way to further develop and implement such an excellent concept.

Please be assured that I and the Illinois Department of Public Health will work with you to refine the proposal and identify the most effective levels of participation and linkages for the state health agency. I believe that once such a concept is up and running, the Illinois Department of Public Health would be able to finance that portion of the track in which School of Public Health faculty would rotate through our agency. Further, I believe we could consider underwriting a part of the startup costs, as well as assist your efforts to secure funding through the University of Illinois/Board of Higher Education or outside funding sources.

Effective linkages between the academic and practicing sectors of public health are essential if we are to meet the challenges posed by the "Future of Public Health." Your initial proposal helps us take some important initial steps along that road. I wish you well in presenting this concept to the University's leadership.

Sincerely,

Bernard Turnock MD

Bernard J. Turnock, M.D.
Director of Public Health

cc: Richard Krieg, Ph.D., Acting Commissioner, Chicago Department of Health

September 19, 1989
Ref# 3005-09-89

Jacob A. Brody, M.D.
Dean
School of Public Health
2121 West Taylor Street
Chicago, Illinois 60612

Dear Dr. Brody:

This follows the meeting held in my office last week with Dr. Turnock and yourself.

I believe that the Clinical Teaching Track for Public Health Practice makes sense. It is a creative and pragmatic solution to problems associated with public health practitioner training. The concept also responds to the Institute of Medicine's call for improved coordination between schools of public health and public health agencies.

As you know, the Mayor and Governor have expressed their intent to work together in the area of health system reform. Your proposal has a direct bearing on several important issues: improving the manpower pool within the public health system, consolidating university-based and governmental health care expertise; training community leaders in order to sensitize them to the realities of health system improvement.

The Chicago Department of Health is committed to assisting you in any way possible to develop this program. As suggested, it would be of considerable benefit to our agency.

Although it is too late to commit a position or person to you with reference to our FY1990 program year, I would be very optimistic that we could do so after then. Until that point, please keep me informed regarding the evolution of this innovative concept.

Sincerely,

Rick M. Krieg

Richard M. Krieg, Ph.D.
Acting Commissioner

RMK/vc

cc: Honorable Mayor Richard M. Daley

WORKS

Senator DURENBERGER. Thank you very much.

The next witness is Dean Harvey Fineberg of Harvard University. Dr. Fineberg is recognized as a leading authority on the cost/benefit and cost-effectiveness of various health care programs. He recently expanded his areas of interest to AIDS prevention and control through education and behavioral changes.

Dr. Fineberg, we look forward to your thoughts on health promotion.

Dr. FINEBERG. Thank you very much, Senator. It is a privilege to be here and to have an opportunity to present before you these ideas.

Health promotion and disease prevention, particularly empowering people to forestall disease by living healthfully, will do more to improve the health of America than can ever be done through medical services after disease has struck. Of course, we can do a better job in assuring access, good quality, and reasonable cost in health care. At the same time, we must act much more aggressively in the area of prevention.

The U.S. Preventive Health Services Task Force report emphasized the critical role that physicians can play in carrying out preventive measures and education patients about risky behavior and how to change it. But this, at best, means reaching only one person at a time in a doctor's office or at the hospital bedside. Communication on a more widespread basis and concerted community-based programs are the key to real success in effecting widespread behavior change so that people generally will do two things: first, seek out preventive measures, such as mammography for early detection of breast cancer, immunization and periodic examinations; and, second, switch from unhealthful to healthful living practices. Especially here, in the area of getting people to help themselves to health, is where schools of public health come in indispensably.

The schools themselves and their graduates who serve as public health officials at all governmental levels and in the private sector, have the kind of knowledge and skills required to plan, organize, and coordinate health promotion programs in schools, churches, places of work, social organizations, and other group settings. They know how to effect communication to reach people in the home—for example, by working through the mass media, television, radio, and the press—to convey valid health facts and advice interestingly and persuasively. An example of this most familiar to me is the partnership that Harvard's Center for Health Communication has formed with producers and writers of 80 percent of all prime time television shows and the three major TV networks. In a joint effort to reduce the alarming rate of alcohol-related highway accidents, they advance the positive idea of the "designated driver" through scenes that are written into scripts. In a recent episode, for example, of the highly rated TV show "Cheers," the regulars at the bar are seen drawing lots to determine who would lay off alcohol that night and drive the others home. The Center has a similar working arrangement with 30 national magazines reaching 180 million readers with articles correcting misconceptions about health and promoting healthful behaviors by families. Another relationship, with the popular children's "Nickelodeon" cable TV show, urges young viewers to eat right and be active physically. The University of California - Berkeley School of Public Health produces an informative and lively monthly "Wellness Letter" that has a million subscribers throughout this country and abroad. All of the 24 graduate schools of public health are engaged in health promotion and disease prevention, traditionally the most prominent concern in our teaching, research, and service.

The importance of life style choices is illustrated by differences in trends in heart disease, still the Nation's number one killer, and in lung cancer that now represents more preventable American deaths than any other form of cancer. Since the late 1960's when, happily, many Americans decided that sticking with healthful foods, exercising regularly, and quitting smoking were the things to do, heart disease has declined by more than 30 percent as a cause of mortality in this country. Advances in the care of cardiac patients, such as intensive care, new drugs, and better emergency services, indeed contributed to prolonging the lives of many heart attack victims. But positive changes in life style were most responsible for the decrease in mortality by preventing heart disease in the first place. The result is a dramatic improvement in the heart health of the American people. The news is not as good about lung cancer, which rose in incidence more than 50 percent between 1975 and 1985. Since 1986, lung cancer has overtaken breast cancer as the leading cause of cancer death among U.S. women. It is no coincidence that there is less lung cancer today among U.S. men who, as a group, are smoking less. Nor is it surprising that with smoking still too popular among U.S. women, particularly young women and adolescents, more women are dying of lung cancer than ever before. Tragically, this is a thoroughly preventable disease.

Health promotion and disease prevention in some sense underlie all of our presentations here today. Effective health promotion and disease prevention constitute the ultimate among the year 2000 objectives that we have set for ourselves as a Nation. If these objectives are to be achieved, there must be a greater investment in human capital. That means investment in the health agencies upon whose effectiveness success in meeting those objectives depends. It means more substantial investment in the schools that produce leaders for the public health establishment. These leaders must be recruited, provided with the financial aid they need, and trained to serve in the Federal Government, the 50 States, and in local communities to meet the needs of all citizens.

As they work to solve the wide range of health problems confronting the Nation, their primary goal will be health promotion and disease prevention. And that must be the goal if the people's health is truly to be safeguarded and improved.

Thank you.

[The prepared statement of Dr. Fineberg follows:]

Prepared Statement of Harvey V. Fineberg, M.D.

Health promotion and prevention of disease are the most promising strategies to improve the health of the American people and reach the goals we have set for ourselves as a nation by the year 2000. If you think about the quagmire of medical service and health care that we now have, so many Americans underserved or unserved, costs still running out of control, quality of care being called into question and many people, including physicians, the payers, government officials and the public at large frustrated and disappointed, you might wonder is there any way that we can get out of this mess. The answer is that we need to do a lot of things about the health care system and, at the same time, we need to take a much more aggressive attitude, a much more constructive, proactive attitude about preventing disease before it starts. There is no question but that we can do more to improve the health of America by means of communication and behavior change than we will ever accomplish through the use of medical services.

All in this room know well the importance of sound health habits. But the message has not gotten across to millions of our fellow citizens, young and old. The U.S. Preventive Health Services Task Force Report emphasized the critical role that physicians play in carrying out preventive measures and educating patients about risky behavior and how to change it. But this, at best, means reaching only one person at a time in a doctor's office or at hospital bedside. Communication on a mass basis to population groups is the key to real success in effecting widespread behavioral change so that people generally will do two things: first, seek out preventive measures, such as mammography for early detection of breast cancer, immunization and periodic physical examination; second, switch from unhealthful to healthful living practices. Especially here, in the area of getting people to help themselves to health, is where the schools of public health come in indispensably.

The schools themselves and their graduates who serve as public health officials at all governmental levels and in the private sector, have the comprehensive knowledge and skills required to plan, organize and coordinate health promotion programs in schools, churches, places of work, social organizations, and other group settings. They know how to effect communication to people in the home by working through the mass media -- TV, radio and the press -- to convey valid health facts and advice interestingly and persuasively. An example of this most familiar to me is the unique partnership which my school's Center for Health Communication has formed with producers and writers of 80% of all prime time television shows and the three major TV networks. In a joint effort to reduce the alarming rate of alcohol-related highway accidents, they advance the positive idea of the "designated driver" through scenes that are written into scripts. In a recent episode of the highly rated TV show, "Cheers", the regulars at the bar were seen drawing lots to determine who would lay off alcohol that night and drive the others home. The Center has a similar working arrangement with 30 national magazines reaching 180 million readers with articles correcting misconceptions about health and promoting healthful behavior by families. Another relationship, with the popular children's "Nickelodeon" cable TV show, urges young viewers to eat right and be active physically. The University of California - Berkeley School of Public Health produces an informative and encouraging monthly Wellness Letter that has a million subscribers throughout this country and abroad. All of the 24 graduate schools of public health are engaged in health promotion and disease prevention, traditionally a very prominent concern in our teaching, research and service.

The importance of life style choices is illustrated by the differences in trends in heart disease, the nation's number one killer, and in lung cancer that causes more deaths among U.S. women than any other form of cancer. Since the late 1960's when, happily, many Americans decided that sticking with nutritious foods, exercising regularly and quitting smoking were the things to do, heart disease has declined by more than 30% as a cause of mortality in this country. Advances in the care of cardiac patients, including intensive care, new drugs and better emergency services, have saved and prolonged the lives of many heart attack victims. But positive change in life style is regarded as most responsible for the decease in mortality by preventing heart disease in the first place. The result is a dramatic improvement in the heart health of the American people. The news is not as good about lung cancer which rose in incidence more than 50% between 1975 and 1985. Since 1986, lung cancer has overtaken breast cancer as the leading cause of death among cancers in women. It is no coincidence that there is less lung cancer today among U.S. men who, as a group, are smoking less. Nor is it surprising that, with smoking still too popular among U.S. women, particularly young women and female adolescents, more women are dying of lung caner than ever before. Tragically, this is a preventable disease subject to the personal choice of individuals.

Despite having accomplished much in specific areas of health protection, the amount yet to be done is daunting, particularly when we contemplate the growing threat of behavior-related diseases, including sexually transmitted disease such as HIV infection and AIDS. We have not yet as a nation really faced up to the opportunities and requirements to make the best use of the means of communication and education that can do more for the health of the public than anything else. We read in the business news that a certain manufacturing firm has spent $35 million and another has budgeted $120 million for, in each case, advertising a new and improved product. The anticipated behavior change is simply that of the consumer passing up the old bottle or package on the store shelf and reaching instead for the one labeled "new and improved". These are sound commercial investments. The corporate decision makers know what they're doing. Yet in the health field we have been too slow to pick up and utilize the same techniques of communication and promotion of behavioral change that are so effective in other aspects of American life.

The schools of public health are crucial to the health of America because they are the one set of institutions in this country that are uniquely capable of pulling together in a critical and analytic way the evidence about risks to health whether from individual behavior or from the environment or other biologic agents. All of the disciplines relevant to public health are represented on their faculties -- medicine, dentistry, biological and social sciences, engineering, epidemiology, biostatistics, nutrition, nursing, economics, law, administration and others. Thus their research, teaching and service cover the spectrum of health problems, determining causation and searching for means of controlling disease and disability. It is only through the strategy of prevention, practiced and taught in schools of public health, that we can work our way out of the problems in our health care system and advance the health of the public in an affordable way. Comprehensively trained graduates of these schools provide leadership in our health departments at local, state and national levels. They hold responsible positions in the private sector, including major industries and insurance companies. They serve our country not only within our borders but also as representatives promoting health around the world. This cadre of dedicated people with broad knowledge and specialized skills could not be prepared in any other way than by the kind of multidisciplinary graduate education received in schools of public health. The schools, therefore, serve both as a repository of learning and understanding and as a unique source of generations of leadership in public health. They are a vital national resource.

Effective health promotion and disease prevention constitute the ultimate among the Year 2000 objectives. If these objectives are to be achieved, there must be greater investment in human capital. That means investment in the health agencies upon whose effectiveness success in meeting the Year 2000 Objectives will depend. It means more substantial investment in the schools that produce leaders for the public health establishment. Such leaders, particularly public health physicians, scientists, engineers, epidemiologists and biostatisticians, are much in demand but in seriously short supply. They must be recruited, financially aided as needed and trained in increasing numbers to serve in the federal government, the 50 states and in local communities to meet the needs of all our citizens.

There is obvious need to strengthen the resources of the schools to accommodate increased enrollment and to develop new teaching programs to prepare students to cope with new and emerging health problems. The schools require additional funds with which to conduct non-degree courses for health officials in the field and to expand working relationships with health agencies as sites for field practice training and faculty consultative services on health agency problems. It is perhaps not as well understood that success in recruiting students for service in areas of severe shortage will depend on availability of adequate financial support for such students while in training. This is particularly true of minorities and disadvantaged potential admission candidates who invariably cannot afford full cost of public health graduate education. It is equally the case with physicians and other basically trained professionals. Many are heavily in debt from previous education. At an average age of 31, many have families to support. All would be sacrificing opportunities for high income in the private practice of their professions in contrast to the relatively low salaries in public service. Socially conscious and eager as they may be to enter careers in pubic health, they would be giving up a great deal to do so. I sometimes point out that I am the only dean at Harvard who on average lowers the lifetime earning capacity of graduates by taking would-be heart surgeons and turning them into public health professionals. I trust this underlines the absolute necessity of student aid beyond what is now available as a means of providing adequate numbers of comprehensively trained leaders of the public health work force. As these leaders devote themselves to solving the wider range of health problems confronting the nation, their primary goal will be health promotion and disease prevention. And that must be a major goal of the nation, if the people's health is to be truly safeguarded and improved.

Senator **Durenberger**. Thank you very much, Dr. Fineberg.

Our next witness is Dean Jerrold Michael of the University of Hawaii. Dr. Michael holds the distinction of having been the youngest, at age 37, to hold a position as Assistant Surgeon General in the U.S. Public Health Service. He is the founder of the Asia Pacific Academic Consortium for Public Health.

Dr. Michael, I look forward to your thoughts on public health activities in the Pacific Basin.

Dr. **Michael**. Senator, I am going to speak on two subjects: health in the Pacific and also the health promotion centers, both of which I think demonstrate the substantial and wide-ranging contributions of academic public health in preventing disease and promoting health in the United States and also in its affiliated Pacific Nations.

The Pacific Basin story is one of the most unique and rewarding collaborative activities that I have ever had the pleasure of being associated with in my 40 years in the field. It exemplifies the pioneering work undertaken by academic institutions to actively improve health status among impoverished populations.

That undertaking is the State of Hawaii Governor's Pacific Health Promotion and Development Center, and it is a unique partnership of the Governments of the Pacific Nations and territories with the Government of the State of Hawaii, the Federal Government, the private sector of health and medicine in Hawaii, and, most importantly, the University of Hawaii and its School of Public Health. That collaborative activity has been able to do some remarkable things to carry out programs for the treatment of otitis media in children and the enhancement of nursing and physician skills; set up a special medical school in the Pacific, specifically to train medical officers who will remain there; establish hepatitis B immunization programs and mental health evaluation programs, and as I will describe in a moment, conduct two surveys of health status in the Pacific. That critical step, as I am sure you know, was chartered by your colleague, Senator Inouye, who made it possible for the University of Hawaii to conduct the first survey in 1984, and again in 1989. Those findings resulted in the establishment of this Governor's Pacific Health Promotion center.

The minor differences between the findings from those 2 years simply underscore the fact that this is an underserved area, much like a developing Nation, with much remaining to be done in five areas. One is health leadership development; one, manpower development; another, health systems development; a fourth—the problem of a growing population; and finally there is intense public health neglect. Of those, at least four and probably five are amenable to the actions of public health where academic public health can be extremely helpful.

One of the reasons that makes us feel that intervention is so significant is that change will ultimately result in great economic savings and possibly a model for intervention in other parts of our country, as well as other parts of the world.

My second topic is supplemental to Dean Fineberg's comments. It deals with the prevention centers, of which we now have five. There were 13 centers originally authorized, and we are hopeful that the U.S. Senate will follow the recommendations of the Association of Schools of Public Health, to permit us to expand those five to the 13 that were originally authorized. I would be anxious to see one in Minnesota, and, of course, in South Carolina among others.

The universities that are involved currently are the University of North Carolina, the University of Texas, the University of California at Los Angeles, the University of Washington, and the University of Hawaii.

The University of Washington Prevention Center has a focus on the health problems of the elderly; North Carolina's center is focused on ways to prevent cancer, cardiovascular disease, injury and low birth weight babies; the University of Texas focuses on children and their school environments; the University of California at Los Angeles on minority communities, and the University of Hawaii on health in international and cross-cultural populations.

There are a number of outstanding accomplishments from those centers that I would like to highlight.

The University of North Carolina, along with their North Carolina Justice Academy, has developed special programs looking at a very important issue, and that is the issue of preventable cardiovascular disease among law enforcement officers. The center at North Carolina——

Senator DURENBERGER. Why do we worry about that? Don't they all retire at 50 or 55 or something like that?

Dr. MICHAEL. Well, we want them to retire healthy so they can enjoy the rest of their lives and continue contributing to society.

Senator DURENBERGER. I see. Excuse me. I didn't mean to interrupt you.

Dr. MICHAEL. It was a good question, Senator.

The Prevention Center at North Carolina is also working on low birth weight children and unnecessary death.

The University of Washington is looking at the elderly and has set a goal of reducing injuries by 25 percent through some very innovative techniques. The Washington Center has also developed the only truly tangible work in the area of what happens to people over 55, which involves you and I, Senator—or you are close to that. I am over it.

Senator DURENBERGER. I am over—no, I am on it. Laughter.]

Dr. MICHAEL. Their works deal with why, if you quit smoking at that advanced age it is still advantageous to you. That definitive work has been published in the New England Journal of Medicine.

The Southwest Center at the University of Texas has done remarkable work ranging from keeping children healthy to the health of the elderly. Some of their work in the primary schools has been very effective. The Texas group has also looked at cardiovascular disease in children, an area not well studied and where much work remains to be done.

UCLA is looking at the Latino group which, by the year 2000, will comprise 50 percent of the population of Los Angeles and increasingly throughout our country, there are many special things to be learned there.

At the University of Hawaii, we are looking at the multiethnic populations and at what the potentials there are for application of these findings in a variety of other areas where multiethnic populations predominate.

We are very appreciative of the health promotion work of CDC. We are appreciative of the fact that the former head of CDC, now the Assistant Secretary for Health, Dr. Mason, established the ground work in CDC, and that work is being continued by Dr. Roper. We are hopeful that with increased funding we will be able to expand the work of these centers that are doing many of the health enhancing things Dr. Fineberg talked about, as well as those that I have detailed.

Thank you for letting me run over my time limit, Senator.

[The prepared statement of Dr. Michael follows:]

TESTIMONY BEFORE THE SENATE COMMITTEE ON LABOR AND HUMAN RESOURCES ON THE SUBJECT OF "CONTRIBUTIONS OF ACADEMIC PUBLIC HEALTH TO DISEASE PREVENTION AND HEALTH PROMOTION"

UNITED STATES SENATE
April 24, 1990

by
Dr. Jerrold M. Michael
Dean and Professor of Public Health
University of Hawaii School of Public Health
Honolulu, Hawaii

Mr. Chairman, I am Dr. Jerrold Michael, Professor of Public Health at the School of Public Health at the University of Hawaii, where I have served for 19 years, the past 18 as Dean of the School of Public Health. Prior to that I served for 20 years as a commissioned officer in the United States Public Health Service, retiring at the end of 1970 as Assistant Surgeon General.

My topics on this panel are the Public Health in the U.S.-Related Nations and Territories of the Pacific Basin and the Prevention Research Centers. Both Serve to demonstrate the substantial, wide ranging contribution of Academic Public Health in preventing disease and promoting health in the United States and its affiliated territories.

The Pacific Basin story is one of the most unique and most rewarding collaborative activities that I have ever been involved in during my 40 years work undertaken by academic institutions to actively improve health status among impoverished populations.

That unique undertaking is the State of Hawaii GOVERNOR'S PACIFIC HEALTH PROMOTION AND DEVELOPMENT CENTER--a historic partnership of the governments of the Pacific nations and territories with the government of the State of Hawaii, the federal government of the United States, the private sector of health and medicine in Hawaii and the Pacific Basin, and most importantly the University of Hawaii and its School of Public Health.

The several nations that comprise the Pacific Basin are organized into autonomous governments which differ in their political relationship with the United States. Three of the jurisdictions--American Samoa, Guam and the Commonwealth of the Northern Mariana Islands--are known as the flag territories and hold territorial status with the U.S. The other three jurisdictions--the Federated States of Micronesia, the Republic of the Marshall Islands and the Republic of Palau--are referred to as the Freely Associated States inasmuch as they hold semi-independent or quasi-sovereign status with the U.S. Despite these obvious differences in political relationship, a common factor ties the islands together; that is, the still very developmental nature of their health systems.

The earlier strategic action on this issue came out of a meeting called by Senator Inouye to specifically address the profound health problems of the U.S.-related Pacific. Also in attendance were the Assistant Surgeon General from Region IX, San Francisco, and several Public Health service and congressional staff members. What followed as a consequence was the first comprehensive survey of health services and conditions in the Pacific ever to be undertaken. That survey, conducted by the University of Hawaii in 1984, has served as a benchmark for the initiation of newly focussed activities to improve health care in the region, including the formal inauguration of the Governor's Pacific Health Promotion and Development Center three and a half years ago.

The concept of the Center actually evolved from three decades of contact between the schools of the health sciences at the University of Hawaii--and the Pacific Island health departments. The collegial and highly successful nature of this provision of urgently needed technical assistance convinced Governor Waihee that a broad-based consortium of public and private health-related agencies could have an even more synergistic impact, and he embraced this vision as one of his first major service programs to the Pacific.

Under Governor Waihee's leadership, the Center concept has become an operating entity which has coalesced the major health and health-related resources present in Hawaii in a wholesome effort to contribute to the improvement of health status of the Pacific Islands and to simultaneously assist Hawaii in its own health care development. Inherent in the mission of this Center is the recognition and desire to enhance the self-determination of the Pacific nations in managing and sustaining their own health systems as they deem appropriate.

During the first two years of operation, the secretariat for the management of Governor's Pacific Health Center was directly based in the School of Public Health. Recognizing a need to place the Center in the private sector, its continuing locus now resides in a community hospital and it is managed by a Professor of Public Health whose salary is jointly shared by the State Department of Health and the School of Public Health.

Linked closely with the PACIFIC ISLAND HEALTH OFFICERS ASSOCIATION and the REGION IX OFFICE OF THE UNITED STATES PUBLIC HEALTH SERVICE in San Francisco, the Center has been funded through the collaborative contributions of the federal government and the State of Hawaii, along with significant donations from the private sector. That latter contribution is in the order of $150,000. The program has been carried out by volunteers from Hawaii, funded only for their travel expenses.

They have been able to: carry out remarkably effective programs in the treatment of otitis media (inner ear infection) in children; develop training programs for the control of hypertension and diabetes; provide short-term technical training for Pacific health workers in laboratory technology, radiology and facilities maintenance; enhance nursing and physician skills through in-service training; develop Pacific Island health professionals' skills in rehabilitation assessment, acute rehabilitation and home care for the disabled; inverse the medical manpower available in the Pacific through a medical officers training program in Pohnpei; improve health information systems; establish hepatitis B immunization and control programs; develop community health centers; conduct a comprehensive study of mental health and substance abuse; and, as I shall describe below, conduct a comprehensive reassessment of health services and conditions in the U.S.-related Pacific.

As noted earlier a critical step taken by the U.S. Senate and the Senior Senator from the State of Hawaii, Daniel K. Inouye, made it possible in 1984 for the University of Hawaii to carry out a full assessment of the health services and conditions in the U.S.-related Pacific jurisdictions. That study identified important differences in the availability and accessibility of health resources in the Pacific, and its findings have served to help identify priority areas for the kinds of collaborative activities sponsored by the Governor's Pacific Health Promotion and Development Center.

The U.S. Senate has again provided the opportunity last year for a reassessment of health in the Pacific Basin to be conducted by the University's School of Public Health. It is not my purpose at this sitting to detail those conditions, except to reinforce the fact that in many ways the health conditions found in the Pacific parallel those of developing nations in Asia.

The overall findings of the most recent 1989 study, which is still in draft form, suggest that while the U.S. Pacific health systems have made slight yet measurable progress in nearly all of the areas first surveyed in 1984, nevertheless the systems and services reflect a low level of adequacy with the flag territories doing better than the freely associated states. The slight improvements may be attributed in large part to the internal resourcefulness by the island nations and to the external support received from the U.S. federal government, and at least in part from the Governor's Pacific Health Center. As a result of our analysis, several suggested directions seem appropriate for the future:

- HEALTH LEADERSHIP. There is a health leadership crisis in the Pacific. Senior health leaders are retiring with few persons with expertise available to take their jobs.

  This is clearly an area for academic public health intervention.

- MANPOWER DEVELOPMENT AND TRAINING. Major health manpower shortages exist in the Pacific, and there is a need to develop a consistent and supportive plan which will assist in providing indigenous health personnel to serve the needs of the area.

  Again academic public health will be critical to the solution of the problem.

- HEALTH SYSTEMS PLANNING AND DEVELOPMENT. None of the jurisdictions are pursuing deliberate development of their health systems through the process of planning and that is an area where additional effort is needed.

  Academic public health has always addressed this major topic.

- RAPID POPULATION GROWTH. The Pacific Island jurisdictions are continuing to experience rapid population growth. This rapidly changing demography in the face of diminishing resources will create problems of significant dimension for the future.

- PUBLIC HEALTH NEGLECT. Finally, the most critical area is that public health and prevention continues to be neglected because of the need to emphasize repair or clinical health services and tertiary care. Preventable problems continue to add to the increasing health problems and economic burdens of the Pacific Island jurisdictions.

  Academic public health is clearly key to the solution of this issue.

The collaborative volunteer private sector-multigovernmental effort that lies at the heart of the Governor's Pacific Health Promotion and Development Center is based in the brotherhood that exists between the peoples of the Pac~~ific. Its~~ future holds a potential for enhancing health promotion in the Pacific by not only addressing the current and tangible problems of the people of that area, but with its focus on health promotion , I believe that it can serve to reduce an unnecessary future economic burden on the United States. And I believe it presents a model that may well be applied to other parts of our country and to other parts of the global community. Without the active contribution of academic public health, neither present nor future efforts would be possible.

A positive future potential is presented by federal legislation addressing Pacific Basin minorities contained in Senate Bill 1606, the Disadvantaged Minority Health Improvement Act of 1989. That Bill was introduced in the 101st Congress, passed the U.S. Senate Committee on Labor and Human Resources on November 1, 1989 and the full Senate on November 21, 1989. At the adjournment of the Congress on November 22, 1989, the companion House Bill was not enacted, but it is hoped that action during the current session will provide the companion bill that will allow the Act, and in particular Title III, to be initiated.

Title III establishes the Pacific Basin Health Services Council and provides funds for the continuation of a variety of programs now being funded separately, and through the Governor's Pacific Health Center. The Pacific Health Center serves as a nidal point for the formal establishment of the Council and for the continuation of this worthy collaborative health effort.

I would now like to comment on the federal initiative known as the "National Centers for Research and Demonstration of Health Promotion and Disease Prevention". It is a topic of much importance to the health of the nation.

As we approach the 21st century, we see the cost of health care continuing to rise, new diseases presenting new challenges to the nation's health while old, recurring diseases evidence abiding threats to the people. Most characteristic of the nation in the 21st century will be our changing demography. By the year 2050, the average U.S. citizen will trace her or his roots to Africa, Asia, the Hispanic world, the Pacific Islands, or the Middle East--nearly anywhere but Europe. The plurality of cultures, values and perspectives will take us beyond the proverbial "melting pot" to a "coloring" of America which will inevitably alter every aspect of life, including health behavior, health care and health itself. This is not a matter which is good or bad, desirable or undesirable. Rather it is a reality, an inevitability. How then should we prepare for this reality in ways which promote the common good in a fair and equitable manner? The answer is by putting into place, supporting and sustaining policies and programs which look forward and anticipate the problems, challenges and opportunities of the time to come.

Such forward-looking policy is embodied in the act of Congress which amended the Public Health Act, Sections 302 (a) and 1706, to establish National Centers for Research and Demonstration of Health Promotion and Disease Prevention. I wish to speak once again today in support of the National Prevention Research Centers initiative and ask the Senate to continue to sustain and expand the program to its fullest, as initially envisioned by Congress. I encourage the Congress to move forward with positive action toward the eventual establishment of thirteen national prevention research centers as called for in the Public Health Act. Likewise, I would encourage the committee to take positive steps to request the resources appropriate to the full functioning of these national centers, that is to fund them at a level of one million dollars each year as called for in the initial legislation.

This brief report addresses one of the most important congressional initiatives in the public health arena in recent decades--The CDC Prevention Centers Program. This program has immense potential for energizing public health research and practice as the 20th century approaches. It also has made significant accomplishment in its brief life.

Formally titled the National Centers for Research and Demonstration of Health Promotion and Disease Prevention, this network of academic research programs, based presently in 5 schools of public health, is now linked effectively with the new Center for Chronic Disease Prevention and Health Promotion at the Centers for Disease Control. It is also strongly supported by the Association of Schools of Public Health, representing academic public health nationally.

The Program clearly is having an impact. The accomplishments to date are significant.

The funds available to date, though far below the level envisioned by the creators of this program

--have catalyzed institutional changes at those schools where prevention centers exist to place a stronger effort on prevention research that can be applied to public health programs,

--have been the basis for obtaining additional funds to address major health problems, such as cancer, cardiovascular disease, injuries, infant mortality at the community level,

--have provided for the development and testing of sentinel programs for minorities, rural populations, inner-city Latino populations, worksite locations, occupational groups, communities and schools,

--have helped concentrate university expertise on health promotion and disease prevention issues and have carried this expertise and a strong scientific base to local state, and territorial health departments,

--have provided a framework for an important assessment of the status of Federal Employee Worksite health promotion and disease prevention activities, which the existing centers are jointly undertaking with the Office of Personnel Management, the Office of Disease Prevention and Health Promotion and the Associations of Schools of Public Health.

--have provided direct services to state health departments to improve the health promotion and disease prevention programs and to collaborate on research and program evaluation projects.

While Congress has intended that there be thirteen national centers of health promotion and disease prevention research, presently there are five centers which are designated and operating, and with only partial funding. The five centers are located at the University of North Carolina, the University of Texas, the University of California at Los Angeles, the University of Washington, and the University of Hawaii. Each center has its unique focus in the common mission of health promotion and disease prevention.

The University of Washington Prevention Center is a joint venture between the School of Public Health and the Group Health Cooperative of Puget Sound. The focus of the center is upon "Keeping older People Healthy and Independent" -- preventing falls and hip fractures, increasing physical activity, reducing alcohol and prescription drug use, correcting visual and hearing problems, preventing motor vehicle accidents and injuries at home.

The University of North Carolina Prevention Center is focused on ways to prevent cancer, cardiovascular disease, injury and low birth weight babies. A special project of this center is the development of training materials to help prevent injuries and deaths from poisoning, firearms, motor vehicle accidents, burns and falls.

The University of Texas Prevention Center focus is on children's school environments with interest in improving school conditions--food service, physical education and guidance counseling.

The University of California at Los Angeles Prevention Center focus is on inner-city minority communities and the development of health promotion programs among African-American, Hispanic-American and Korean populations.

The center at the University of Hawaii is located in the School of Public Health. The focus of our center is upon the relationships across the life course of health behaviors and risks to health and disease among diverse populations in Hawaii, the

Pacific and Asia. Thus, the center in Hawaii is designated as an international health promotion center. We believe that Hawaii can serve the nation and the world as a living laboratory, a microcosm of the nation's multi-ethnic, cross-cultural future and test tube of sorts for the conduct of internationally relevant health promotion/disease prevention research. This role is appropriate and needed in the context of the changing face of the nation in the 21st century.

Let me expand on some illustrative accomplishments of the five centers.

- The Prevention Center at the University of North Carolina, in conjunction with the North Carolina Justice Academy developed a 47-hour health and physical fitness component that is now part of the training course for each new law enforcement office in North Carolina. The purpose of this project is to reduce the cardiovascular disease burden in this important occupational group.
- Because low birth weight has been one of the major causes of death in the region, the North Carolina Prevention Center has been instrumental in the dissemination of preconceptional health promotion through more than 16 local health departments as well as the development of materials for use in schools and occupational settings. The purpose of this project is to determine the impact of preconceptional health promotion activities on pregnancy behaviors and outcomes.
- The University of Washington Prevention Center has set a goal to reduce incidences of disabling falls and hip fractures in the elderly by 25 percent. The center has undertaken a major case control study of the key factors likely to be involved in hip fractures, a devastating problem for older people, with tremendous social costs. They have learned that loss of cognitive functions (dementia) may play an important, previously recognized role. They have shown the value of being physically active, improving leg strength, and wearing sturdy shoes.
- Due to the concern for the health of older adults, the Washington Prevention Center has researched the effects of smoking cessation in people 55 to 74 years of age. The results of this study, published in The New England Journal of Medicine in November 1988, demonstrate that smoking cessation in later years dramatically reduces the risk of heart attack or death. This is the strongest evidence yet that physicians and friends should urge older smokers to quit.

- The Southwest Center for Prevention Research is located in the School of Public Health of the University of Texas health Science Center, Houston. The theme of the center is "From Healthy Children to Healthy Adults" which focuses research and prevention programs on aspects of health in childhood and adolescence which may strongly influence health later in life. This includes the prevention of heart disease, cancer injuries, teen pregnancy, drug and alcohol abuse, and HIV infection or other sexually transmitted disease.

- As a result of funding for this Center an infrastructure has been created within the University of Texas Health Science Center and with other universities to bring together and support investigators from a variety of disciplines to address the critical areas of preventing health problems of children and youth. The work of faculty in the Center has lead to the establishment of a network with health departments in a eight state region including Texas, New Mexico, Arizona, Colorado, Oklahoma, Arkansas, Louisiana, and Missouri. the Southwest Center provides training and technical assistance to the state and local department of health, to transfer prevention methods developed in research and demonstration projects to public health community programs.

- A major outcome of the funding for the Texas Center has been to support the development of research grants to obtain external funding from other agencies for major research and demonstration projects such as ways to encourage schools to adopt effective tobacco prevention programs, development of an intervention to prevent and maintain smoking cessation for pregnant women, the study of how children develop factors cause cardiovascular disease, adolescent coping to prevent risk for suicide, and school-based health promotion programs to influence healthful diet and physical activity behavior and the prevention of smoking in children and youth.

- Cardiovascular disease in children has been examined in a sample location in The Woodlands, Texas. The results being assessed include data from blood pressure screenings, student questionnaires, family questionnaires and information from school records on scholastic achievement and physical fitness.

  This study has provided data reflecting the health status, with particular emphasis on cardiovascular health, of children in The Woodlands community.

- Because in the year 2000 the Latino population will comprise over 50 percent of the total population in Los Angeles, the Prevention Center at UCLA selected this community as the target group for their health promotion/disease prevention efforts. This newly funded center is based on "grass-roots" community organization. Accomplishments to date have been the selection of El Monte for intensive Latino community organization, the formation of a local steering committee and the selection of "family wellness" as the local theme. Having accomplished these essential steps, the center is now ready to formulate a strategy to begin the implementation of health promotion/disease prevention programs.

- The International Center at the University of Hawaii is working to expand the existing health information data bases in Hawaii, the Pacific and Asia. We are studying the relationship between risks and health. Psycho-social/cultural determinants will also be looked at in these three populations. We will use information from these areas to design program interventions to improve health.

  In the year since the Center has been funded, accomplishments have been made in the following areas: (1) The relationships between behavioral risk profiles of Hawaii's ethnic populations and actual health status are being assessed in collaboration with the Hawaii State Department of Health. This information is being used to design health programs for minority populations. (2) The International Center receives reportable disease information from six U.S. Pacific Island territories and nations on a weekly basis and forwards the information to the Epidemiology Program Office of CDC. The Center publishes the information monthly in its Pacific Morbidity and Mortality Monthly. (3) The Center has completed a behavioral risk factor survey project in Korea. This information has been gathered and assessed. The Center is now using this new information to assist in planning intervention programs for Korea as well.

In closing, I would like to applaud the efforts of the U.S. Centers for Disease Control, its former Director, Dr. James Mason, and the current Director, Dr. William Roper, and their staff for the very professional and energetic performance of administrating the national prevention research centers' initiative on behalf of the federal government. We appreciate the high quality, collegial and collaborative approach to the management of this program by CDC. We are especially pleased with the movement of the program into the new Center for Chronic Diseases and Health Promotion. [That move alone has brought an appreciated level of energy and commitment on the part of CDC leadership and staff.]

Mr. Chairman, my colleagues and I in the Nation's Schools of Public Health are confident that increased investment in the Prevention Research Centers can and will have a huge payoff in preventing disease and promoting better health for all Americans.

Senator **Durenberger**. Thank you very much.

I don't know whether Carl is on his way to introduce you, Dr. Osborn. He might be. But I just must ask Dr. Michael this. We will ask public health questions later, but I have to ask you a Pacific kind of question. My impression is that that is like two-thirds of the world practically, or something like that.

Dr. **Michael**. A huge area. Just the United States——

Senator **Durenberger**. I mean how do you do it? That is the question.

Dr. **Michael**. It is very difficult. If you take just the U.S.-related territories and you superimpose the map of the mainland United States over it, it would stretch from California to Maine. That is the geography you have to cover just for territories like American Samoa, Guam, and the Northern Marianas. Distance becomes one of the major problems of health service development. The simple task of resupplying vaccines becomes a major undertaking. Maintaining them in appropriate style because of degradation due to the tropical climate is also a significant problem.

The profession doesn't face those kinds of special problems in many places. In the South Pacific, maintaining health is made more difficult by an antagonistic environment; because of geography, and because of a variety of other things such as cultural conflicts. These people are those that we in the United States have had a trust for. It was a trust territory, and it still is an area where much needs to be done. We are thankful for the efforts of you and your colleagues in the Senate, and in particular for our distinguished Senator Daniel Inouye.

Senator **Durenberger**. Well, I think that was the point I was hoping you would end up on. I didn't know you would, but I think Danny has just done a tremendous job of being sensitive to the special underserved nature of that population.

Dr. **Michael**. And he is so regarded there in every place, Senator. They don't know him from a picture. They know him because he has been there and is devoted to the pacific people. And they don't vote in Hawaii!

Senator **Durenberger**. I think I am going to introduce Dr. Osborn for the purposes of the statement. I know Carl has a statement, and when he gets here, he may elaborate on it as he may wish.

June Osborn is the dean of the University of Michigan School of Public Health who was recently elected Chair of the National Commission on AIDS. She is a member of the World Health Organization Global Commission on AIDS and, as such, is the leading spokesperson for comprehensive and compassionate response to the AIDS epidemic.

We look forward, Dr. Osborn, to your presentation on AIDS prevention and control.

Dr. **Osborn**. Thank you, Senator. It is a privilege to be here, and I am glad to have a chance to make some comments. I want to spend a few minutes telling about some of the contributions made to our society through the schools of public health in recent years as we have tackled the burgeoning problems associated with the advent of AIDS as a pandemic disease.

In brief, much of what we know about HIV epidemiology and transmission, the natural history of the progression of that viral infection to severe and lethal illness, and the behaviors that either promote or protect against further virus spread derive from research studies in which schools of public health have played pivotal roles. From such studies, we now understand that only sex, birth to an infected mother, or injection of substantial quantities of blood, or sharing of injection during drug use can transmit HIV; that various kinds of sexual risk behavior are associated with different efficiencies of virus transmission; that health education can be effective in markedly diminishing virus spread; and that such educational strategies are most likely to succeed when established principles of health behavior are taken into account in their design. All these insights provide us with a potentially powerful armamentarium for prevention which is likely to be our sole defense for years to come in the epidemic.

The crises provoked by the AIDS epidemic in the past nine years have brought out clearly the need for a multidisciplinary approach to serve the health needs of the American people. It is that multifaceted approach characteristic of the public health profession that has made the schools of public health so useful and prominent in the Nation's mobilization against the human immunodeficiency virus and AIDS. It goes without saying that a great many of the dedicated professionals in the U.S. Public Health Service who have performed so valiantly in response to the advent of AIDS received their public health training at the schools of public health, but in addition much of the benchmark research most pertinent to AIDS prevention and strategies for health delivery and care has been contributed by the faculty and students at those schools. So plentiful have been the contributions that I will only illustrate by example, and beg my colleagues to forgive me if I am not complete.

Understanding the fundamental epidemiology of HIV and AIDS is essential, of course, for assessing means of virus spread and for designing effective preventive strategies to abort further spread. In this regard, the ongoing studies at the University of California at Berkeley have provided unique data concerning both risk behavior and the education-induced changes in that behavior and its efficacy in the San Francisco Men's Health Study. Similar insights have been developed by groups of behavioral scientists working in Chicago but led by one of the faculty at my own University of Michigan School of Public Health.

Those pioneering groups established baseline data and hypotheses that were then used to set up the long-term, prospective, so-called Multicenter-AIDS-Cohort Study, often referred to as the "MACS Study," under the aegis of the National Institutes of Health. That collaborative effort has extended their findings and provided crucial insights into degrees of effectiveness of various kinds of behavior change efforts intended to reduce HIV risk. While the MACS study is centered at the NIH, critical contributors at schools of public health at Johns Hopkins, UCLA, and Pittsburgh have been integral to the productivity of the investigations.

As AIDS education became ever more clearly the primary weapon available for prevention, the academic disciplines of health education and health behavior have emerged as pivotal to the task.

I am proud of the fact that at our School of Public Health Dr. Marshall Becker, our associate dean, has played a very key role serving since 1987 on the National Academy of Sciences Committee on AIDS Research and the Behavioral and Social Sciences. He currently also serves on the Institute of Medicine committee to study the AIDS research program at NIH, and is now also a leader of the group designated to evaluate the Robert Wood Johnson Foundation's AIDS education behavior projects, assessing effectiveness of various community-based behavioral interventions.

A strikingly broad approach to the problems of the HIV epidemic is represented in the Harvard AIDS Institute, spearheaded by the Harvard School of Public Health, with the excellent leadership and support of Dean Harvey Fineberg. Their investigators deal with many facets of primary prevention, secondary prevention issues, and health care financing and delivery problems created or intensified by the AIDS epidemic, and a series of thoughtful analyses has been produced dealing with such key public policy issues as premarital testing. Investigators in that school are also contributing importantly to the quest for a potential vaccine against HIV and AIDS.

The Columbia School of Public Health has been involved in a number of research initiatives aimed at prevention, particularly focusing on critical interface between the AIDS and drug use epidemics as they have impact in minority communities. Similar efforts are under way at the University of Massachusetts School of Public Health and at the University of Michigan.

I could continue listing such activities at considerable length, but instead I have appended a compilation put together by the Association of Schools of Public Health just over a year ago that adds further detail concerning research and that also gives some information concerning training and health promotion efforts as they relate to the epidemic.

Finally, I have played several roles in the epidemic as dean of the University of Michigan School of Public Health, including chairing the National Institutes of Health NHLBI Ad Hoc Advisory Committee on AIDS and the Nation's Blood Supply starting in 1984, until I assumed chairmanship of the National AIDS Commission. I also chaired the Robert Wood Johnson Foundation's National Advisory Committee for their AIDS Health Services Project, and, as mentioned, have been on the Global Commission on AIDS for the World Health Organization, as well as since 1989 serving as Chairman of the U.S. National Commission on AIDS created by the Congress in late 1988.

In these several roles, I have been reinforced repeatedly in my belief that the concept and structure of the schools of public health have positioned them to play uniquely valuable roles in the epidemic, and that the focus on prevention and health promotion characteristic of academic public health has been richly validated in the mobilization to meet the problems that face us in the upcoming decade of epidemic increase. As the National Commission on AIDS visits around the country, assessing the variety and intensity of impact of the epidemic on health and health care, the importance of well-trained public health professionals as key participants in an effective response is striking and likely to become more so, for the challenges of providing care for great numbers of chronically ill young adults are most likely to involve public health facilities and strategies in new and intensified ways. Thus, the training capabilities as well as the research and service activities of the schools of public health will become increasingly important in upcoming years.

Thank you.

[The prepared statement of Dr. Osborn follows:]

Contributions of Schools of Public Health: The AIDS Epidemic

Testimony of June E. Osborn, M.D., Dean, The University of Michigan
School of Public Health, to Senators Durenberger and Kennedy
April 24, 1990

Senator Durenberger, Senator Kennedy and distinguished colleagues. My name is Dr. June Osborn and I am the Dean of the School of Public Health at the University of Michigan. I want to spend a few minutes telling you about some of the contributions made to our society through the Schools of Public Health in recent years as we have tackled the burgeoning problems associated with the advent of AIDS as a pandemic disease. In brief, much of what we know about HIV epidemiology and transmission, the natural history of its progression to severe and lethal illness, and the behaviors that either promote or protect against further virus spread derive from research studies in which Schools of Public Health played pivotal roles. From such studies we now understand that only sex, birth to an infected mother or injection of substantial quantities of blood can transmit HIV; that various kinds of sexual risk behavior are associated with different efficiencies of virus transmission; that health education can be effective in markedly diminishing virus spread; and that such educational strategies are most likely to succeed when established principles of health behavior are taken into account in their design. All these insights provide us with a potentially powerful armamentarium for prevention which is likely to be our sole defense for years to come.

The crises provoked by the AIDS epidemic in the past nine years have brought out clearly the need for a multidisciplinary approach to serve the health needs of the American people. It is that multi-faceted approach, characteristic of the public health profession, that has made the Schools of Public Health so useful and prominent in the nation's mobilization against (HIV) and AIDS. It goes without saying that a great many of the dedicated professionals in the U.S. Public Health Service who have performed so valiantly in response to the advent of AIDS received their public health training at the Schools of Public Health, but in addition much of the benchmark research most pertinent to AIDS prevention and strategies for health delivery and care has been contributed by the faculty and students at those Schools. So plentiful have been the contributions that I can only illustrate by example, rather than attempt a complete compilation in the short time we have.

Understanding the fundamental epidemiology of HIV and AIDS is essential, of course, for assessing means of virus spread and for designing effective preventive strategies to abort further spread. In this regard, the ongoing studies of Warren Winkelstein and his colleagues at the University of California-Berkeley School of Public Health have provided unique data concerning both the risk behavior and the education-induced changes in that behavior in the San Francisco Men's Health Study. Similar insights have been developed by a group of behavioral scientists working in Chicago but led by Dr. Jill Joseph at my own University of Michigan School of Public Health.

Those pioneering groups established baseline data and hypotheses that then were used to set up the long-term, prospective Multicenter-AIDS-Cohort Study (or MACS) under the aegis of NIH. That collaborative effort has extended their findings and provided crucial insight into degrees of effectiveness of various kinds of behavior change efforts intended to reduce HIV risk. While the MACS study is centered at the NIH, critical contributors at Schools of Public Health at Johns Hopkins, UCLA and Pittsburgh have been integral to the productivity of the investigations.

As AIDS education became ever more clearly the primary weapon available for prevention, the academic disciplines of health education and health behavior emerged as pivotal to the task. I am proud of the fact that Dr. Marshall Becker, Professor of Health Behavior and Health Education and Associate Dean of the University of Michigan School of Public Health, has played a key role. He has served since 1987 on the National Academy of Sciences Committee on AIDS Research and the Behavioral and Social Sciences, currently serves on the Institute of Medicine Committee to Study the AIDS Research Program at NIH, and is also now the leader of a group designated to evaluate the Robert Wood Johnson Foundation AIDS Education projects, assessing the effectiveness of various community-based behavioral interventions.

A striking broad approach to the problems of the HIV epidemic is represented in the Harvard AIDS Institute, spearheaded by the Harvard School of Public Health, with the leadership and support of Dean Harvey Fineberg. Their investigators deal with many facets of primary prevention, secondary prevention issues and health care financing and delivery problems created or intensified by the AIDS epidemic, and a series of thoughtful analyses has been produced dealing with such key public policy issues as premarital testing. Investigators in that school are also contributing importantly to the quest for a potential vaccine against HIV and AIDS.

Columbia School of Public Health has been involved in a number of research initiatives aimed at prevention, particularly focussing on the critical interface between the AIDS and drug use epidemics as they have impact in minority communities. Similar efforts are underway at the University of Massachusetts School of Public Health and at the University of Michigan.

I could continue listing such activities at considerable length, but instead I have appended a compilation put together by the Association of Schools of Public Health just over a year ago that adds further detail concerning research and that also gives some information concerning training and health promotion efforts.

Finally, as you know, I have played several roles in the epidemic as Dean of the University of Michigan School of Public Health, including chairing the NIH (NHLBI) Ad Hoc Advisory Committee on AIDS and the Nation's Blood Supply from 1984-89, chairing the Robert Wood Johnson Foundation's National Advisory Committee for their AIDS Health Services Project, serving as a member of the Global Commission on AIDS of the World Health Organization since 1988, and since August 1989 serving as chairman of the U.S. National Commission on AIDS. In these several roles I have been reinforced repeatedly in my belief that the concept and structure of the Schools of Public Health have positioned them to play uniquely valuable roles in the epidemic, and that the focus on prevention and health promotion characteristic of academic public health has been richly validated in the mobilization to meet the problems that face us in the upcoming decade of epidemic increase. As the National Commission on AIDS visits around the country assessing the variety and intensity of impact of the epidemic on health and health care, the importance of well-trained public health professionals as key participants in an effective response is striking and likely to become moreso, for the challenges of providing care for great numbers of chronically ill young adults are most likely to involve public health facilities and strategies in new and intensified ways. Thus the training capabilities as well as the research and service activities of the Schools of Public Health will become increasingly important in upcoming years.

I will be pleased to answer any questions you may have.

ASPH
ASSOCIATION OF
SCHOOLS OF
PUBLIC HEALTH

Newsletter

Volume 1, No. 2, Spring 1988

ASPH Legislative Report

ASPH Capitol Hill activities have been severely constrained by the current federal budget deficit crisis. In light of the Gramm-Rudman-Hollings budget reduction act and the deficit reduction summit agreement reached between the White House and Congress in November 1987, federal health programs (e.g., PHS programs, including capitation, traineeships, preventive medicine residency programs, prevention centers, CDC's educational resource centers, MCH, biomedical and behavioral research, programs on aging, preventive services block grants, health services research, disease prevention and health promotion programs, etc.) are vulnerable to reduction in funds.

These programs will be subjected to intense scrutiny because of the immense pressure to reduce the deficit. Even if it is reduced in the next 5 years, that pressure will not subside. Congress' attention will shift to the huge national debt problem which, by 1995 or so, will be about $4 trillion. Interest on the debt will represent 15 percent or more of the budget, which means that it will be almost impossible to start new programs or increase existing ones. Therefore, Congress will want to eliminate and/or maintain at current levels most federal programs and, hopefully, increase taxes to reduce the debt and lower interest payments. This scenario does not bode well for domestic health and social programs in general, and for academic public health programs in particular.

ASPH, however, will continue to advocate and pursue the enhancement of its legislative agenda in the 100th Congress and the one to follow. Outlined below is a brief description of our legislative activities since the last Deans' meeting in April 1988.

continued on page 15

Schools Respond to AIDS Challenge

The 24 schools of public health have responded rapidly to the challenge posed by the AIDS epidemic. Through research, training, health promotion, policy analysis, advocacy, community service, and other activities, the schools are making a valuable contribution to the worldwide effort to eradicate AIDS. The following summary illustrates the wide range of activities in which the schools of public health are currently engaged with regard to AIDS.

Policy

While schools of public health have been involved in health policy issues for some time, the involvement has frequently been at the individual faculty of school level (i.e., research, expert testimony, technical assistance). The AIDS epidemic, however, has necessitated a more active and extensive role for the schools. Because behavior change is the only currently effective weapon against AIDS, and because the lack of knowledge about AIDS is widespread among the public and among many legislators and health administrators, schools of public health are ideally suited to be the leading advocates of an informed AIDS policy. The schools' expert knowledge of health behavior, their long experience in health education, their knowledge of health policy, and their capabilities in both basic and applied research combine to make them an invaluable resource for all aspects of the AIDS crisis.

Through the Association of Schools of Public Health (ASPH), the 24 schools have acted together on several policy initiatives thus far. In 1982 ASPH was one of the first health organizations to rally behind Rep. Henry Waxman's groundbreaking AIDS bill (then called a bill to meet public health emergencies).

In June 1986 the Deans sent a telegram to Attorney General Edwin Meese protesting the Justice Department's ruling that Section 504 of the 1973 Rehabilitation Act did not protect employees from discrimination based on the fear they might spread AIDS at work. The telegram sent by ASPH noted that experts agreed that "AIDS cannot be transmitted by casual contact," and insisted that "public policy must be governed by scientific evidence and not by unsubstantiated beliefs." Due to the strong opposition of health organizations, including ASPH, the Justice Department rescinded its ruling.

In April 1988, at the request of Senator Kennedy, ASPH sent a letter endorsing his bill S. 1220: A Comprehensive AIDS Research, Information and Care Act. This bill and the equivalent House bill were later passed.

The schools of public health are fortunate to have several well-known experts on AIDS policy among their deans. One of the most respected authorities on AIDS is Dr. June Osborn, Dean of the Michigan School of Public Health. Dean Osborn is frequently called on by members of Congress and congressional committees for assistance in legislative matters involving AIDS. She has testified before Congress on many occasions and is a leading public advocate for a reasoned AIDS policy. Other recognized experts are Dr. Harvey Fineberg, Dean, Harvard School of Public Health; Dr. Allen Rosenfield, Dean, Columbia School of Public Health; and Dr. Andrew Sorenson, Associate Dean, Johns Hopkins School of Hygiene and Public Health.

Both individually and through coalitions, the schools are actively engaged in the effort to create scientifically sound and socially responsible AIDS legislation and policies. They are just as active in fighting policy initiatives and

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proposals that are based on misinformation and are socially harmful. Alabama reports it is using its "legal, scientific, and community relations expertise in an attempt to modify or nullify several legislative initiatives which seem to represent the leading edge of another epidemic: ill-advised or naive AIDS legislation."

Researchers at the Boston University School of Public Health are working on the development of an AIDS vaccine testing policy and liability issues involved in the development of such a policy. At Harvard, faculty members are developing model AIDS legislation for the 50 states and the School has established a working group on AIDS policy that includes experts from other schools on campus and the Boston area.

In 1986, Berkeley and the three other California schools (UCLA, Loma Linda, and San Diego) mounted a vigorous educational campaign to defeat Proposition 64, the "Prevent AIDS Now" initiative, which had been placed on the November ballot. Advocated by followers of Lyndon LaRouche's National Democratic Policy Committee, Proposition 64 would have required statewide mandatory testing, made AIDS an officially reportable disease, and subjected people with AIDS to quarantine. Supporters of Proposition 64 agreed with LaRouche's contention that "AIDS is spread through the air and by mosquitoes." The educational campaign of the California schools against Proposition 64, consisting of fact sheets, public forums, radio announcements, a policy paper, and testimony before the state legislature, contributed to the 2-1 defeat of the initiative on the November ballot. When the LaRouche initiative was reintroduced in June 1988, the California schools organized another educational campaign and the initiative was again defeated.

In addition to policy research and advocacy, the schools of public health also give valuable assistance to policymakers and health agencies by providing factual information on AIDS and by serving on task forces, commissions, boards, and community organizations. All of the 24 schools of public health are actively involved in an attempt to establish an informed and humane social policy on AIDS.

Training

The schools of public health are expanding their curricula in AIDS, both for their own students and for the public health workforce. Nine schools have initiated separate courses on AIDS for their students, and others report increased course content on AIDS in their required core curriculum.

In addition to curricula offerings for their own students, a number of schools are offering campus-wide seminars and programs on AIDS. Hawaii has initiated a 3-credit course on the AIDS epidemic for undergraduates at its University. The interest and need for information on AIDS among other students and faculty on campus has led them to ask the schools of public health to assume a leadership role in providing accurate and scientific information.

Training on AIDS for health professionals and the general public is provided through workshops, seminars, continuing education courses, conferences, and educational materials. Some recent continuing education offerings include "Reproductive Health Care and Women and AIDS" (Columbia), "Epidemiology of AIDS" (Johns Hopkins), "AIDS Education: Issues and Challenges" (Minnesota), and "Are Condoms the Answer?" (North Carolina). In the fall of 1988, Hawaii will conduct a training program for students from the Asia-Pacific region in AIDS epidemiology and HIV laboratory methods.

Examples of instructional materials prepared by the schools for health workers include a resource and information manual on AIDS (Puerto Rico) and a videotape of IV drug users who have contracted AIDS to be used by drug counselors (Johns Hopkins).

Puerto Rico, San Diego, Alabama, and South Carolina have or will sponsor major AIDS conferences. In May 1988, San Diego sponsored a 2-day conference on "AIDS in the Community: Where Are We?" Attended by over 450 health professionals, the conference focused on AIDS issues in Southern California and community response.

As part of its Great Ibero-Panamerican Encounter on Public Health and Health Services to be held in August 1988, Puerto Rico will sponsor its second symposium on AIDS. The purpose of the symposium is to provide health professionals with the latest information on AIDS prevention and treatment and to discuss administration of AIDS-related programs. The 1-day symposium will be attended by health ministers, health workers, and deans of the schools of public health in Spain, Portugal, Latin America, the Caribbean, and the United States.

In 1987, South Carolina sponsored an international conference on AIDS education attended by over 400 people from different disciplines and countries. A second international conference on AIDS education will be held on August 2-4, 1988. Immediately afterward, the School will sponsor another conference (August 4-6) on the impact of AIDS on health care delivery systems.

Two final examples illustrate the recognition that schools of public health have received as major resources for AIDS education and training.

Minnesota has been selected to be part of a 6-state Midwest AIDS Training and Education Center funded by the Health Resources and Services Administration (HRSA). Faculty from Minnesota will develop a statewide program to train community health workers and students in health professions schools such as medicine and nursing.

Tulane has also been designated as a Regional AIDS Education and Training Center by HRSA. The goals of the Tulane program are to train primary care providers (medical, nursing, social service, dental, and others) and to develop curricula and faculty expertise on AIDS.

In September 1987 a Task Force on HIV/AIDS and Education for Public Health was convened by the Columbia School of Public Health. In its report, the Task Force made a number of recommendations to the schools of public health for training in AIDS. These recommendations include the following:

1. Develop multidisciplinary offerings and integrate AIDS-related material in all appropriate course offerings.
2. Develop faculty expertise in AIDS.
3. Enhance partnerships with local, federal, and state agencies for training and joint research.

4. Increase partnerships with local groups to provide AIDS education.

5. Expand minority group participation (racial and sexual orientation diversity) on the faculty.

6. Form partnerships with community-based groups to develop strategies to respond to the AIDS epidemic.

7. Stimulate development of AIDS curricula in other health professions schools.

8. Expand the production of professionals with training in ethics and law. (The Task Force noted that this is particularly vital for the schools of public health since a substantial portion of their graduates assume policy-making roles.)

The Task Force has provided the schools of public health with a useful agenda for the development of AIDS training programs.

Health Promotion

The schools of public health are engaged in a wide variety of health promotion activities with regard to AIDS including research, public education, and community service. While a comprehensive description of the full range of programs is not possible, a few examples will illustrate the breadth and depth of involvement.

Based on a recent knowledge and attitude survey of 15,000 students, Alabama is developing a model for providing in-depth AIDS education on college and university campuses. A similar study is underway at Berkeley. Hawaii provides AIDS serology screening for blood donors, while Texas has a program to counsel and test at-risk women making use of Houston family planning/STD clinics. Massachusetts, in collaboration with its University Theater Department, has developed a cabaret theater on AIDS and AIDS prevention which gives performances in dormitories and other student gathering places.

Pittsburgh is conducting research on the effectiveness of AIDS educational interventions, and Johns Hopkins is mounting a worldwide AIDS education campaign through its Population Information Program. Columbia is currently engaged in health education and prevention activities in three communities in New York City. UCLA has an AIDS community education project focused on drug users and prostitutes in Long Beach that will include the development of TV and radio public service announcements (PSAs). Illinois is developing a comprehensive AIDS prevention and education strategy for drug users.

Boston is studying the knowledge, attitudes, and behavior of adolescents and of health care workers with regard to AIDS. KAP (knowledge, attitudes, and practice) studies are also being conducted at Tulane (several population groups in Zaire) and at Texas (a telephone survey encompassing the entire State of Texas and a survey of college freshmen).

Health Care

While the focus of public health, and the schools of public health, is on prevention, the area of health care has always been one of major interest and involvement for the schools. The AIDS crisis has mobilized the schools' expertise in health behavior, health economics, health service delivery, health policy, and ethics. Following are a few examples of current activities in the schools.

Boston and Columbia are conducting attitude surveys of health care workers. Boston's project deals with 1,047 health care workers, while Columbia is examining the effects of caring for AIDS patients on nurses and physicians.

Oklahoma and Texas are doing research on cost issues involving AIDS patients. Oklahoma's research is on the cost of caring for AIDS patients on an outpatient basis. Texas has several projects dealing with direct costs on hospitals, AIDS service organizations, and persons with AIDS/HIV; the assessment of indirect costs; and Medicaid costs.

UCLA is doing a minority AIDS needs assessment in Los Angeles that includes an assessment of medical care needs. Harvard is serving as the home of the Boston AIDS Consortium, an organization that promotes coordination of AIDS care and service efforts in the Boston area. Initial areas being assessed are the financing of care; reimbursement issues; educational intervention strategies; mental health issues; and the structuring of ambulatory, long-term, and hospital-based care.

As noted above, South Carolina will host a conference on August 4-6, 1988; the title of the conference is "Managing AIDS Services and Resources." The issues to be addressed include the organization of health services, the management of AIDS, health-care provider issues, and community organizing.

Yale has several research projects involving the patterns of health care services, service delivery gaps, barriers to the receipt of services, future service needs, and the economic impact of AIDS on Connecticut.

Research

The schools of public health conduct a wide variety of applied and basic research on AIDS. A number of projects have already been mentioned. The level of research activity on AIDS is very high among the schools, and a comprehensive discussion of research activities is not possible. However, the following examples from some of the schools will give an indication of the types of research currently being conducted in the schools.

Berkeley has several major projects including the San Francisco Men's Study and the California Partners Study. Other research involves "helper" white blood cells in AIDS-infected individuals, and a study of AIDS transmission among the general population of San Francisco to determine how far the epidemic has spread beyond the initially identified high-risk groups.

UCLA is part of the Multicenter AIDS Cohort Study (MACS), a national project that follows the natural history of AIDS among homosexual and bisexual men in four locations. The UCLA cohort includes 1,637 men who were first seen at UCLA in 1983-84 and will be followed up through 1991 for infection with HIV and development of AIDS. Other activities at UCLA include a study of retinal opportunistic infections, an AIDS prevention project among adolescent pimps and prostitutes in Hollywood, and a major study of the effectiveness of condoms in preventing and controlling the spread of AIDS.

Research projects at Columbia include studies of AIDS risk in a black

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community, the mental health effects of AIDs, and HIV infection during pregnancy.

Harvard is a component of the new university-wide AIDS Institute for research, training, education, and policy. Harvard is also the home of the newly-created national Statistical Center for the AIDS Clinical Trials Group, a cooperative grouping of the 39 ACTUs in the United States. Two current research projects involve virological and epidemiological studies in Zaire (HIV-1) and Senegal (HIV-2), and a study of related viruses (feline leukemia virus, human leukemia virus, simian immunodeficiency virus) as building blocks to understanding the AIDS virus.

Illinois has projects in Chicago, Baltimore, Denver, and El Paso that integrate ethnographic and epidemiologic techniques in AIDS research.

The Johns Hopkins School is a component of the newly-established Johns Hopkins University AIDS Institute, a university-wide consortium. The School is also part of the Multicenter AIDS Cohort Study (MACS); its cohort consists of 1,153 homosexual and bisexual men. A few examples from the School's extensive research program include clinical trials on AIDS vaccines (Johns Hopkins is one of 6 NIAID vaccine evaluation centers in the United States selected to test AIDS vaccines in humans), AIDS modeling, research on the factors that regulate susceptibility to HIV-1 in CD4 cells, the role of breast-feeding in the transmission of AIDS, the impact of transfusing contaminated blood, the development and testing of AIDS educational materials for youth at risk, and the development of improved AIDS testing techniques.

Massachusetts is implementing a competency-based educational program for Hispanic teenagers to reduce AIDS-related risk behaviors and to train school nurses in bicultural sensitivity.

Michigan is developing mathematical and statistical models for the study of AIDS transmission.

North Carolina is conducting a study of strategies for sexual contact tracing for HIV in 3 North Carolina health departments.

Oklahoma is developing a mathematical model to analyze data of "at risk" populations and a more effective screening mechanism for the HIV virus.

Pittsburgh is also part of the Multicenter AIDS Cohort Study (MACS); the Pitt Men's Study follows the natural history of AIDS in 2,400 homosexual and bisexual men. The School is also an AIDS Clinical Trial Unit (ACTU). Additional research involves a study of the effects of the drug AZT on hemophiliacs.

San Diego is evaluating the handling of specimens for HIV testing and has a project that applies the "stages of change" model to AIDS-related preventive actions.

Texas is conducting a review of epidemiological projections of AIDS and HIV infection in Texas through 1992.

Washington is conducting research in Nairobi and Senegal on risk factors and the prevention of heterosexual transmission, has a prospective study on vertical transmission and pediatric AIDS, is investigating the association of HIV and malignancy (cervical cancer) and is researching the antibody response of monkeys infected with simian AIDS.

The Yale Arbovirus Center has been expanded to include the study of human retroviruses and has been designated as a World Reference Center for Human Retroviruses. Researchers will identify and characterize 50 suspected HIV strains obtained from U.S. and foreign laboratories. The strains will be diagnosed and characterized, and a collection will be available for distribution as reference HIV strains. These strains will provide a standard for comparison of other strains that are isolated in other clinical and epidemiological studies.

Other Activities

Because of the interdisciplinary nature of their research and training programs, schools of public health serve as natural leaders of university and community coalitions. At least nine of the schools belong to university-wide AIDS institutes or task forces, and in four instances the group is directed by a dean or faculty member from the school of public health. A number of the schools are also active members of community or state coalitions. As noted above, several schools are part of national research and training projects such as the MACS and ACTU programs.

Three schools have formed international networks for collaboration on AIDS research and education. Harvard is establishing an international research network to facilitate collaboration among scientists studying the impact of AIDS on reproductive health. South Carolina has formed an International Society for AIDS Education headed by a council composed of international experts in AIDS education research, directors of AIDS education programs, and members of gay and people with AIDS organizations.

Johns Hopkins has established an international network on AIDS education through its Population Information Program (see above). In addition, it plans to establish an International Collaboration in AIDS Research (ICAR) project and a postdoctoral AIDS fellowship program in its Fogarty International Center.

The activity in education, training, and research on AIDS among the schools of public health has been reflected in an impressive body of publications. In addition to a long list of scientific and scholarly publications, the schools have also produced a body of expert testimony published in the records of the U.S. Congress and state legislatures, newspaper articles and commentary, fact sheets, policy papers, resolutions, and a variety of educational materials.

Three schools have initiated newsletters and journals on AIDS. South Carolina has inaugurated a quarterly journal entitled *AIDS Education and Prevention: An Interdisciplinary Journal.* Texas publishes an *AIDS Working Group Newsletter* for about 300 area service providers and researchers, and Washington plans to publish a quarterly AIDS newsletter aimed at the general public through their places of employment. Berkeley's popular *Wellness Letter* also regularly runs feature articles on AIDS.

In 1986 the Johns Hopkins Population Information Program published a scientific review of AIDS epidemiology and research entitled "AIDS – A Public Health Crisis." More than 150,000 copies of the publication have been produced in four languages and requests are continuing to pour in from all areas of the world. Dr. Jonathan Mann, director of WHO's Special Programme on AIDS, has called it "the best single publication on the subject."

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Conclusion

The summary of activities given above provides ample evidence that the schools of public health are heavily involved and committed to using their skills and resources in the fight against AIDS. Only a partial listing of programs and activities was possible—the schools have many other projects and areas of involvement that were not included. As major public health institutions, the schools of public health are fulfilling their role as leaders in the fight against what some experts believe is the most devastating epidemic in human history.

—Judith Magee

[*Author's Note*: Information for this article was provided by the 24 schools of public health. In addition, some material was taken from a recent article in the *American Journal of Public Health* (April 1988) entitled "AIDS, Policy Analysis, and the Electorate: The Role of the Schools of Public Health," authors Nancy Krieger and Joyce C. Lashof. The author wishes to express her appreciation to the deans and staff of the schools for their assistance.]

Senator **Durenberger**. Thank you.

Our next witness is Dean Winona Vernberg, University of South Carolina. Dr. Vernberg is the immediate past president of the Council on Education for Public Health. Her work in environmental health is well known, and she advises many Federal, State, and local agencies on environmental issues.

Doctor, we look forward to your focus on environmental health.

Dr. **Vernberg**. Thank you, Mr. Chairman.

Environmental health problems have been well documented for many years, but it is only recently that environmental degradation has become a profound societal concern. This fact is due to the perception among the public that the health of individuals is threatened by exposure to contamination from hazardous materials released into the environment from activities related to industry, agriculture, waste disposal, power generation, and transportation. Environmental health problems are generally very complex, and the solution to these many problems requires highly trained professionals who have the ability to integrate knowledge from many disciplines, to synthesize the data from a variety of sources, and then to arrive at solutions which are both practical and scientifically sound. Environmental health scientists trained in schools of public health are such professionals. A few examples can illustrate this point.

Much of our current knowledge of indoor air pollution comes from a study coordinated by the Harvard School of Public Health. I am sure this was used in the recent bill that you were talking about. Called the "Six Cities Study," this project is a long-standing and ongoing study which was undertaken to determine the effects of air contaminants, both indoor and ambient, on pulmonary function and the incidence of respiratory disease in adolescents and pre-adolescents. The study represents a pioneering effort to estimate the exposure of persons indoors based on outdoor pollution levels.

Much media coverage has been devoted to the potential health risks of pesticides—the chemicals used to control insects, weeds, molds, and mildew. Much of the danger associated with pesticides occurs in occupational settings. Environmental health scientists at the University of California at Berkeley School of Public Health have been able to discover the underlying cause of pesticide toxicity which has been observed in farm workers. A week to a month after organophosphate pesticides are sprayed on crops, some farm workers in treated fields became ill experiencing nonspecific symptoms. Environmental health scientists found that after spraying, the pesticides were converted in the fields to more toxic oxygenated forms, and exposure to the residue was discovered as being capable of producing acute pesticide poisoning. These studies provided a rational basis for controlling pesticide poisoning in farm workers by means of field re-entry practices.

Now, nonpoint source pollution is becoming a greater problem throughout the United States, and much of this is due to increasing urbanization, particularly in the coastal zone. Now, over one-half the population in the United States works within coastal counties living on less than 10 percent of the Nation's land. By the year 2000, 75 percent will be living within 50 miles of the coastline somewhere in the United States. Environmental health scientists at the University of South Carolina School of Public Health have an ongoing study to develop strategies preventing negative health consequences along the South Carolina Coast where a veritable population explosion is under way. Acre for acre, runoff from sites where homes, shopping centers, or highways are under construction contribute more sediment to waterways than any other single activity. Fortunately, these activities are short-lived, but once an area has been urbanized, then there will be an urban runoff problem. The entire coastal area is facing an increasing lack of fresh water due to salt water intrusion, ground water contamination, and contaminated surface water. Gradually, the health of the people will be affected because of runoff from sewage systems and general degradation of water quality, which in turn will have a marked influence on fish and shellfish in the area.

There are several other ongoing studies which hold promise for elucidating links between health and the environment. These include a project at the School of Public Health at Yale on pregnancy outcomes following exposure to environmental smoke; the application of specialized laboratory tests to measure physiological reactions to exposure to the solvent styrene in industrial workers which is being conducted by researchers from the University of Washington School of Public Health; and an assessment of the problems of pollution of San Diego Bay undertaken by scientists at the School of Public Health at San Diego State University. This is a particularly complex problem because the pollution originates outside the United States.

The schools of public health assume a major responsibility for keeping environmental health professionals in the field abreast of advances and technological changes. It has been estimated that of the 235,000 professionals in the 1987 workforce, approximately 40,000 needed additional training. In 1986 and 1987, the 24 schools of public health responded to these needs by offering approximately 300 continuing education courses open to the public on environmental and occupational topics and covered a wide range of issues from asbestos removal to risk assessment of toxic materials.

Graduates of our environmental health science programs can be found throughout the Nation in State and Federal health agencies, in academic settings, as well as in industry. There is a tremendous demand for students trained by schools of public health in the areas of environmental and occupational health, and over the past decade manpower shortages have been extremely high. Currently, the estimate is that an additional 120,000 individuals are needed in these areas, and that there is every indication that this need will only increase in the years ahead. I think these examples only serve to highlight the continuing need to provide well-qualified environmental health scientists for the future.

Thank you.

[The prepared statement of Dr. Vernberg follows:]

Prepared Statement of Winona B. Vernberg, M.D.

I very much appreciate the opportunity, Mr. Chairman, to speak before the subcommittee to discuss the contributions of academic public health to disease prevention and health promotion in the area of environmental health. Environmental health scientists in schools of public health are involved in studies on health and environmental effects of contaminants in environmental as well as in occupational settings.

My name is Winona Vernberg. I am Dean of the School of Public Health at the University of South Carolina and have been actively involved as a reviewer on national review panels, as a participant in environmental task forces of various state and federal agencies, and as a researcher with support from EPA, NSF, ONR, and NOAA. In addition, I have served on science advisory boards for NASA, EPA, and NOAA.

Environmental health problems have been well documented for many years, but only recently has environmental degradation become a profound societal concern. This fact is due to the perception among the public that the health of individuals is threatened by exposure to contamination from hazardous materials released into the environment from activities related to industry, agriculture, waste disposal, power generation and transportation. Environmental health problems are generally very complex, and the solution to these many problems requires highly trained professionals who have the ability to integrate knowledge from many disciplines, to synthesize the data from a variety of sources, and then to arrive at solutions which are both practical and scientifically sound. Environmental health scientists trained in schools of public health are such professionals. A few examples can illustrate this point.

- Much of our current knowledge of indoor air pollution comes from a study coordinated by the Harvard School of Public Health. Called the "Six Cities Study," this project is a longstanding and ongoing study which was undertaken to determine the effects of air contaminants (both indoor and ambient) on pulmonary function and the incidence of respiratory disease in adolescents and pre-adolescents. The study represents a pioneering effort to estimate the exposure of persons indoors based on outdoor pollution levels.

- Much media coverage has been devoted to the potential health risks of pesticides -- the chemicals used to control insects, weeds, molds, and mildew. Much of the danger associated with pesticides occurs in occupational settings. Environmental health scientists at the University of California at Berkeley School of Public Health have been able to discover the underlying cause of pesticide toxicity observed in farm workers. A week to a month after organophosphate pesticides were sprayed on crops, some farm workers in treated fields became ill experiencing non-specific symptoms. Environmental health scientists found that after spraying, the pesticides were converted in the fields to more toxic oxygenated forms, and exposure to the residue was discovered as being capable of producing acute pesticide poisoning. In addition, the formation of the oxygenated products was shown to be related to the levels of photochemical air pollution in the area. These studies provided a rational basis for controlling pesticide poisoning in farm workers by means of field re-entry practices.

Nonpoint source pollution is becoming a greater problem throughout the United States and much of this is due to increasing urbanization, particularly in the coastal zone. Right now over one-half the population in the United States works within coastal counties living on less than 10% of the nation's land. By the year 2000, 75% will be living within 50 miles of the coastline somewhere in the United States. Environmental health scientists at the University of South Carolina School of Public Health have an ongoing study to develop strategies for preventing negative health consequences along the South Carolina coast where a veritable population explosion is underway. Acre for acre, run-off from sites where homes, shopping centers, or highways are under construction can contribute more sediment to waterways than any other single activity carrying cleaning solvents, oils, tars and pesticides into coastal waters. Fortunately these are short-lived activities; but once the area has been urbanized, then there will be an urban run-off problem. During storm episodes, particularly if there has been a long dry spell, very large amounts of pollutants including oil, grease, heavy metal particles, pesticides, and fertilizers from lawns and golf courses are carried into the coastal water systems. The entire coastal area is facing an increasing lack of freshwater due to salt water intrusion, ground water contamination, and contaminated surface water. Gradually the health of the people will be affected because of run-off from sewage systems and general degradation of water quality, which in turn will have a marked influence on fish and shellfish in the area.

Several ongoing studies hold promise for elucidating links between health and the environment. These include:

* A project at the School of Public Health at Yale on pregnancy outcomes following exposure to environmental smoke;

* The application of specialized laboratory tests to measure physiological reactions to exposure to the solvent styrene in industrial workers being conducted by researchers from the University of Washington School of Public health;

* An assessment of the problems of pollution of San Diego Bay undertaken by scientists at the School of Public Health at San Diego State University. This is a particularly complex problem because the pollution originates outside the United States.

The schools of public health assume a major responsibility for keeping environmental health professionals in the field abreast of advances and technological changes. It has been estimated that of the 235,000 professionals in the 1987 workforce approximately 40,000 needed additional training. In 1986 and 1987, the 24 schools of public health responded to these needs by offering approximately 300 continuing education courses open to the public on environmental and occupational topics and covered a wide range of issues from asbestos removal to risk assessment of toxic materials.

Graduates of our Environmental Health Science programs can be found throughout the nation in state and Federal health agencies, in the academic settings, as well as in industry. There is a tremendous demand for students trained by schools of public health in the areas of environmental and occupational health, and over the past decade manpower shortages have been extremely high. Currently, the estimate is that an additional 120,000 individuals will be required in these areas, and there is every indication that this need will only increase in the years ahead. The ability of schools of public health to attract and train these critically needed scientists will depend in large part on recognition that very few students can afford graduate training without some financial assistance. Hence, it is critical that traineeship funds from the National Institute for Occupational Safety and Health and from the Public Health Service continue to be provided.

Thank you for the opportunity to review some of the contributions of public health environmental health scientists to health promotion and disease prevention and to highlight the continuing need to provide well qualified environmental health scientists for the future.

Senator **Durenberger**. Thank you very much.

Our last witness is Dean Donald Henderson of Johns Hopkins, also president of the Association. Before his deanship, Dr. Henderson was the chief of the Epidemic Intelligence Service at the Centers for Disease Control. He also directed the World Health Organization's success with the smallpox eradication program, the recipient of the Presidential National Medal of Science, the United States' highest scientific honor.

It is an honor, Dr. Henderson, to have you here.

Dr. **Henderson**. Thank you very much, Senator. My colleagues have done an admirable job in briefing you on a very extensive array of activities, and needless to say, they represent only a portion of the many contributions that are being made by schools of public health to improve the health of people in the United States and throughout the world.

It seems to us that central to our real concerns is the fact that we are expending more than $600 billion a year for health care, as well you know and as you mentioned earlier, and that these costs are rising faster than the cost of living. What is paradoxical is that we are spending more money per capita and as a percent of GNP than any other country in the world, and yet among the industrialized countries we rank near the bottom in terms of infant mortality, longevity, and many other measures.

The question is why I think we are gradually coming to realize that, at least in part, we are not spending dollars as we should in prevention of disease and promotion of health, and efforts being made today are neither well targeted nor are they well evaluated. We could do far more with the technology we already have, let alone others which could be developed.

Our primary focus in health policy has been to provide funds to care for the sick. Curiously, we have done little to prevent people from becoming sick, and we feel that that is a balance which could and should be redressed most promptly.

My colleagues and I would respectfully propose that some initial steps be taken to begin a more effective national disease prevention program, with a target directed at present and future Medicare beneficiaries. Specifically, we would like to suggest for your consideration a .1 percent assignment of Medicare reimbursements to the Federal trust fund for preventive education and practice under HCFA—

Senator **Durenberger**. One-tenth of what?

Dr. **Henderson**. One-tenth of 1 percent.

Senator **Durenberger**. Of all Medicare expenditures?

Dr. **Henderson**. Right. We feel that this would provide a meaningful fund for preventive education activities of which you have heard, and it would provide a reimbursement mechanism for public health professionals for providing services to individuals and groups in cooperation with State and local agencies.

We have an analogy with this on the medical side in that we now provide Federal funds for the clinical care of patients for treating the sick. What we are proposing here is a counterpart in public health—a fund to permit schools of public health to provide services to prevent people from becoming sick. It would enable our schools of public health to grow and extend their activities—to innovate, to devise new and better mechanisms for prevention, and to strengthen their educational programs in this process.

In 1986, your committee established a program called the "Demonstration of Preventive Health Services Under Medicare." This was under the Budget Reduction Act. Section 9314 instructed HCFA to establish a 4-year demonstration program "designed to reduce disability and dependency through provision of preventive health services" to Medicare beneficiaries. In response to that, five projects were started. Two years have elapsed, and HCFA has now decided to cut year 3 and 4 allocations by anywhere from 25 to 40 percent. The people are enrolled in the program. The program has begun. And the net effect of all this, as those working with the programs now attest, is that the programs will have operated for 2 years but with no prospect for obtaining meaningful results. It is a false economy.

This is regrettable, and it is our belief that what we do need for the future is a stronger network of schools of public health, as we have schools of medicine, if, indeed, we are to have a healthy America at a cost we can afford.

Thank you.

[The prepared statement of Dr. Henderson follows:]

Prepared Statement of D. A. Henderson, M.D.

MR. CHAIRMAN, I AM D.A. HENDERSON, DEAN OF THE SCHOOL OF HYGIENE AND PUBLIC HEALTH AT THE JOHNS HOPKINS UNIVERSITY AND PRESIDENT OF THE ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH. I WISH TO COMMEND YOU FOR HOLDING THIS HEARING ON THE CONTRIBUTIONS OF ACADEMIC PUBLIC HEALTH TO DISEASE PREVENTION AND THANK YOU FOR MAKING THIS THE PINNACLE EVENT OF THE 50TH ANNUAL MEETING OF THE DEANS OF THE U.S. SCHOOLS OF PUBLIC HEALTH. MY COLLEAGUES HAVE BRIEFED THIS COMMITTEE ON SOME OF THE MAJOR CONTRIBUTIONS OF OUR SCHOOLS TO THE IMPROVEMENT OF HEALTH STATUS NATIONALLY AND WORLDWIDE AND HAVE POINTED OUT THAT MANY PROBLEMS STILL EXIST.

ONE MAJOR OBSTACLE FACING US, MR. CHAIRMAN, IS THE FACT THAT, WHILE WE ARE SPENDING BILLIONS OF DOLLARS ON TREATMENT OF CHRONIC DISEASES AND RESEARCH, WE ARE DEVOTING LITTLE OF OUR HEALTH DOLLARS TO THE PREVENTION OF ILLNESS. WE ESTIMATE THAT TOTAL EXPENDITURES FOR PREVENTION AMOUNTS TO ABOUT THREE PERCENT OF OUR TOTAL HEALTH CARE BILL.* ALTHOUGH THERE IS TODAY GENERAL ACCEPTANCE OF THE CONCEPT OF DISEASE PREVENTION AND PROMOTION OF BETTER HEALTH AS THE MOST EFFECTIVE WAY OF IMPROVING THE NATION'S HEALTH AND CONTROLLING HEALTH CARE COSTS, THERE IS LITTLE EVIDENCE TO INDICATE ANY REAL COMMITMENT TO INCREASING FEDERAL SUPPORT FOR PREVENTION RESEARCH AND EDUCATION.

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* $600 plus billion.

THEREFORE, MR. CHAIRMAN, MY COLLEAGUES AND I RESPECTFULLY PROPOSE THAT THE NATION'S HEALTH SYSTEM BE IMPROVED BY TAKING THE INITIAL STEPS REQUIRED FOR THE EVENTUAL IMPLEMENTATION OF A NATIONWIDE PUBLIC AND PRIVATE DISEASE PREVENTION SYSTEM TO WORK IN A COMPLIMENTARY AND INTEGRATED WAY WITH THE PRESENT THERAPEUTICALLY ORIENTED HEALTH CARE SERVICES SYSTEM. THE INITIAL TARGET POPULATION FOR INDIVIDUAL OR SMALL GROUP INTERVENTIONS AND FOR THE PUBLIC EDUCATION EFFORTS WILL BE PRESENT AND NEAR FUTURE MEDICARE BENEFICIARIES.

THE PROPOSAL WOULD BE FINANCED BY ASKING PHYSICIANS TO CONTRIBUTE 0.1 PERCENT OF THEIR MEDICARE REIMBURSEMENTS. THE $100 MILLION OR SO GENERATED BY THIS VOLUNTARY ASSIGNMENT MECHANISM WOULD CONSTITUTE THE FEDERAL TRUST FUND FOR PREVENTION EDUCATION AND PRACTICE. IT WOULD NOT INCREASE FEDERAL OUTLAYS. RATHER, OVER TIME IT WOULD REDUCE THEM AS THE IMPACT OF PREVENTION EDUCATION AND SERVICES REDUCE THE NEED FOR THE MORE EXPENSIVE THERAPEUTIC SERVICES. THE FUND WOULD BE ESTABLISHED IN THE HEALTH CARE FINANCING ADMINISTRATION AND ADMINISTERED BY AN AGENCY OR AGENCIES WITHIN DHHS FAMILIAR WITH THESE TYPES OF PROGRAMS LIKE CDC.

THE TRUST FUND WOULD, IN EFFECT, PROVIDE A REIMBURSEMENT MECHANISM FOR PUBLIC HEALTH PROFESSIONALS (FACULTY AND/OR PRACTITIONERS) FOR PROVIDING SERVICES TO INDIVIDUALS AND/OR

GROUPS.[**] THIS MECHANISM IS BASED ON THE SAME PRINCIPLE THAT MEDICAL SCHOOLS ARE COMPENSATED FOR THEIR CLINICAL SERVICES. THE TRUST FUND WILL BE A PUBLIC HEALTH PRACTICE THIRD-PARTY PAYER JUST AS THE BLUES, MEDICAID AND MEDICARE ARE FOR THE MEDICAL SCHOOLS. THE TRUST FUND WILL ENABLE THE SCHOOLS OF PUBLIC HEALTH TO INCREASE AND EXPAND THEIR SERVICE COMMITMENT ON AN ON-GOING AND LONG-RANGE BASIS.

I AGAIN WISH TO COMMEND YOU, MR. CHAIRMAN, FOR PROPOSING A PRE-TEST OF OUR PROPOSAL WHEN YOU SUCCESSFULLY AMENDED COBRA IN 1986 TO CREATE A PROGRAM ENTITLED "DEMONSTRATION OF PREVENTIVE HEALTH SERVICES UNDER MEDICARE". SECTION 9314 INSTRUCTS THE HEALTH CARE FINANCING ADMINISTRATION TO ESTABLISH A FOUR YEAR "DEMONSTRATION PROGRAM DESIGNED TO REDUCE DISABILITY AND DEPENDENCY THROUGH THE PROVISION OF PREVENTIVE HEALTH SERVICES" TO MEDICARE BENEFICIARIES. FIVE PROJECTS ARE BEING CARRIED OUT BY SCHOOLS OF PUBLIC HEALTH[***] AND A MEDICAL SCHOOL.

THERE IS MORE AND MORE EVIDENCE THAT SHOWS THAT PREVENTION PROGRAMS CAN VERY EFFECTIVELY CONTROL OR REDUCE HEALTH PROBLEMS AMONG THE ELDERLY. SCREENING PROGRAMS FOR HYPERTENSION, EXERCISE

[**] We propose that Congress establish a counterpart to PROPAC. A blue-ribbon panel should be appointed to monitor the proposed trust fund and establish criteria for services to be reimbursed out of it.

[***] University of California at Los Angeles, University of California at San Diego, the Johns Hopkins University, the University of Pittsburgh and the University of Washington.

PROGRAMS, NUTRITION EDUCATION PROGRAMS AND OTHERS HAVE BEEN VERY SUCCESSFUL. BUT MOST PUBLIC HEALTH SERVICES AIMED AT PROMOTING HEALTH AND PREVENTING DISEASE ARE RARELY REIMBURSABLE BY THIRD PARTY INSURANCE SYSTEMS (MEDICARE, MEDICAID, BLUE CROSS/BLUE SHIELD, ETC.) AS ARE PERSONAL HEALTH SERVICES. YET THE COST BENEFITS OF PREVENTION HEALTH SERVICES ARE WELL ACCEPTED BY THE PUBLIC.

AGAIN, THE PURPOSE OF SECTION 9314 OF COBRA IS TO TEST THE FEASIBILITY OF REIMBURSING PREVENTION SERVICES (E.G., HEALTH SCREENINGS, HEALTH RISK APPRAISALS, IMMUNIZATIONS, COUNSELING IN DIET AND NUTRITION, STRESS REDUCTION, INJURY PREVENTION, PREVENTION OF ALCOHOL AND/OR DRUG ABUSE, AMONG OTHERS) OUT OF THE MEDICARE TRUST FUND.

BY THE WAY, MR. CHAIRMAN, HCFA, AFTER TWO YEARS INTO THE DEMONSTRATION, HAS NOTIFIED ALL FIVE PROJECTS THAT THEIR BUDGETS FOR YEARS #3 AND #4 WILL BE CUT BY 25 TO 40 PERCENT. THESE CUTS ARE PROPOSED EVEN THOUGH THE SITES HAVE SUCCESSFULLY ENROLLED MEDICARE BENEFICIARIES, COMPLETED BASELINE INTERVIEWS AND ARE PROVIDING PREVENTIVE SERVICES. YEARS THREE AND FOUR REPRESENT A SIGNIFICANT PERIOD OF APPLICATION OF PREVENTIVE SERVICES; THE CUTS, MR. CHAIRMAN, WOULD SEVERELY CRIPPLE THE DEMONSTRATION PROGRAM.

THANK YOU, MR. CHAIRMAN FOR SPONSORING THIS HEARING AND ALLOWING US THE OPPORTUNITY TO TESTIFY ON THE CONTRIBUTIONS OF

ACADEMIC PUBLIC HEALTH TOWARDS PROMOTING HEALTH, PREVENTING DISEASE AND CUTTING MEDICAL CARE COSTS AND TO PRESENT THE ASSOCIATION'S PROPOSAL FOR THE EVENTUAL IMPLEMENTATION OF A NATIONWIDE PUBLIC AND PRIVATE DISEASE PREVENTION SYSTEM. WE APPLAUD YOUR LEADERSHIP IN OUR FIELD. THANK YOU.

DRAFT/1
October, 1983

A PROPOSAL
FROM
THE ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH
TO ESTABLISH
THE FEDERAL TRUST FUND FOR PREVENTION EDUCATION AND PRACTICE

> "Medical science has given us abilities to cure no more than a small fraction of the diseases that most commonly beset the U.S. population, with the result that most health system resources must be devoted to amelioration and palliation."
>
> "A very large portion of our national health expenditures is spent on the direct health care costs of conditions for which prevention is to some degree possible."
>
> from Health United States - 1980
> PHS No. 81-1232

This proposal is in response to the widely recognized need, as expressed by DHHS and others, to fill a void in the present health care system: an organized prevention movement.

DRAFT/2
October, 1983

Summary

It is proposed that the nation's health policy be improved by taking the initial steps required for the eventual implementation of a nationwide public and private disease prevention (public education and services) system to work in a complimentary and integrated way with the present therapeutically oriented health services systems--as a means to an end: reduction in the occurrences of chronic, debilitating diseases, their acute exacerbations, and their attendant costs for diagnosis, treatment, and dependency. The initial target population for individual or small group interventions and for the public education efforts will be present and near future Medicare beneficiaries, where a decrease in the burden of illness is a new, reasoned and equitable addition to the strategies required to bring about the reduction in Federal outlays if this program is to survive into the next century.

This long term approach to the increasingly serious problem of federal health care financing is now feasible, based upon the rapidly expanding knowledge base of human biology, of aging, and of evolving prevention strategies. However, in order to bring it about, certain preliminary steps must be taken, the most immediate being a tripartite endeavor: implementation of model prevention service dispensing centers in both private and public settings, development of a rational financing mechanism for prevention services, and documentation of their benefits and cost-effectiveness.

This initial phase would be financed indirectly by the private therapeutic sector through a voluntary foregoing of a fraction of a per cent of the Federal reimbursements to them from Medicare for their services--in effect, a voluntary assignment mechanism. After an initial three year period of a 0.1 per cent assignment, the amount would be reduced 0.02 per cent in three year increments, leveling at 0.02 per cent a year by about the year 2000.

The income generated in this way, constituting a Federal Trust Fund for Prevention Education and Practice, would not increase Federal outlays. Rather, over time it would reduce them as the impact of prevention education and services reduces the need for the more expensive therapeutic services. The Fund would be established by the Health Care Financing Administration of DHHS and administered by an agency or agencies within DHHS familiar with these types of programs.

DRAFT/3
October, 1983

Rationale for the Proposal

In February 1983, the Congressional Budget Office projected an average rate of increase in Medicare outlays during the 1984-88 period of 14.4 per cent per year. Despite the program cuts enacted in 1981 and 1982, the CBO estimates the baseline outlay at $112.1 billion in 1988, by which time the payroll-tax-financed Hospital Insurance Trust Fund will be exhausted. Although this short term picture poses a serious threat to the system, requiring new provisions in the near future, the longer term is even more severe: by the time those middle aged today enter the Medicare-eligible pool, the Federal outlay could exceed $500 billion annually unless other changes are brought about.

Although some of this increase in costs will be due to growth in the size of the eligible aging population, the CBO noted that this accounted for only about ten per cent of the Medicare increase during the 1980-82 period; the remainder of the annual rise was due to rapid increases in the cost of medical care. This will continue to be the case.

The total cost of medical treatment care for any population is made up of two components: the price per treatment episode or service (such as hospitalization) and the number of episodes. Strategies to reduce total costs should focus on both prices per episode and numbers of episodes, but most of the attention to date has been on the former. Indeed, there is a plethora of proposals aimed at reducing prices of services, including the recent DRG reimbursement scheme. Even if successful, however, these measures will probably lead to a reduction in the annual rate of increase in prices and not to any actual declines; costs per unit of service will certainly continue to escalate into the foreseeable future because of the development of increasingly sophisticated diagnostic and therapeutic technologies, compounded by other inflationary factors in the hospital industry. Although at least two national commissions are attempting to determine some new course of action, a solution has not surfaced, nor is one likely.

Little attention has been given to the other dimension: development of policies to reduce the total number of treatment episodes required. The few attempts made, such as PSRO's, have been disappointing. A reduction in the number of justified treatment episodes reimbursed can come about in only two ways: (1) needed care can be withheld (either by a direct rationing mechanism or by an indirect one through a system of deductibles or copayments so high that they reduce the effective demand); (2) the burden of illness creating the need for the care can be reduced. Obviously, the latter alternative is more attractive, but it has received less attention than the former.

Part of the reason for this focus to date upon rationing mechanisms can be traced to the history of Medicare, to a fundamental problem inherent in the Medicare system: it was designed to reimburse only for acute care episodes, but its beneficiaries are a population consisting predominantly of individuals with chronic health care problems. Medicare pays for treatment of most acute exacerbations of chronic diseases, including a heavy outlay for terminal episodes, but it does not pay for the preventive efforts that might reduce the number of acute episodes (with the recent exception of pneumococcal vaccine) or for measures which now show promise to reduce the actual prevalences of chronic diseases in the aging population. Almost all such efforts presently are the responsibility of the individual beneficiary, both to pursue them and to pay for them.

The almost exclusive focus of Medicare upon acute episodes of illness reflects the state of knowledge of the determinants of health and disease at the time of its enactment in 1965. Little was understood about causes of the major chronic diseases; little benefit from comprehensive, ongoing maintenance was seen; virtually nothing about preventive measures was known. But the knowledge base of human biology and disease has undergone an explosive increase since then, and it is timely for the Medicare system to incorporate new provisions based on this new knowledge--not only because it holds great promise to reduce Federal outlays but more importantly because the underlying problem, the burden of chronic disease leading to the need for the outlays, can be reduced. This burden is not, as was once believed, due to fate or bad luck. Rather, much of it comes about from factors over which society and individuals can exert some control. This is especially true with respect to the rate of progression of these diseases from subclinical to clinical states. With this reduction comes the added savings in the hidden but real nonmedical costs of dependency, costs which often exceed those of diagnosis and treatment, plus a more productive, vigorous, and fuller life for older people.

The new human biology of aging suggests that life expectancy will continue to increase slightly for a while longer, but that life span will not. Immortality will not be achieved, but death without disease is theoretically possible, at or around age 85 on the average. Studies done by the National Center for Health Statistics have produced some findings not widely appreciated in terms of their fundamental implications. Complete elimination of cancer as a cause of death would add only about 2½ years to life expectancy at birth or about 1½ years at age 65. Elimination of all deaths from cardiovascular disease, the leading cause of mortality, would increase life expectancy at birth by only 12 years and the gain at age 65 would be only about 11 years. The elimination of these and other causes leads to mortality curves approaching about age 85 as an average maximum life span. Over time, "death from natural causes" (senescence of vital organ systems) may become a reality instead of a layman's misnomer.

The literal and absolute prevention of most of the chronic, debilitating diseases of middle aged and elderly people, on a par with the highly effective public health preventive measures for acute infectious processes that caused most deaths until 60 or 70 years ago, is probably a goal that will not be achieved for at least many more decades. However, the modern concept of prevention, more aptly referred to as postponement (of the onset of clinical symptomatology) is feasible, and, indeed, is already underway. Within the past decade there has been an increase in life expectancy for middle aged adults of more than 2 years--the equivalent of the elimination of cancer as a cause of death. Age-adjusted mortality from heart and cerebrovascular disease is declining, and these changes are believed to be related to postponement phenomena: life style, prevention techniques, and environmental improvements. Exposures to societally-imposed (environmental) and self-imposed risks can be reduced but not eliminated in most situations. Hence, postponement may be a better term to describe this type of prevention.

But will postponement of the onset of the severe symptomatology not simply delay the time when the piper must be paid, and won't the bill be even greater at that time? New findings from the Health Care Financing Administration may negate this fear. An analysis of Medicare experience has shown hospital deaths as a per cent of total deaths in the elderly decline with age. Some of this may be explained by increasing nursing home deaths (not measured), or it may be that less costly, high technology measures are already being initiated for the very old. Whereas the reason may not be completely clear, it is a certainty that the result is a reduced burden on Medicare. More importantly, it was found that the Medicare reimbursement per enrollee for the last two years of life of decedents declined with advancing age. The cost of dying for those 85 and over was only 57 per cent of that for those 67 to 69 at death ($2,459 vs. $4,313 for the years studied). And the cost to Medicare per enrollee for the same two year periods for survivors was much less than for decedents ($413 for two years for survivors 67 to 69 and $628 for two years for survivors 85 and over).

It should be noted that these surprising findings are for the present Medicare system with its recognized focus upon acute treatment care coupled with its lack of emphasis on preventive (postponement) measures and its unspoken role in reimbursement for the costs of dying. (Fully 70 per cent of all persons who die in the U.S. are Medicare enrollees.) These findings make it reasonable to suggest that an added focus upon postponement of symptoms, and indeed upon postponement of dying, would or could be a very important component of cost-cutting in the future. It may be that the ethical dilemma of whether the nation should allocate less funds to maintain the life of very sick, extremely elderly persons or apply some of these funds for preventive purposes is largely a moot one: the data suggest the former is already happening, based no doubt upon the best clinical judgments of physicians; the latter alternative is the chief ingredient missing.

The postponement initiatives called for have both short-term targets (the improved health status of the already aged) and long term ones (improved health status of all future Medicare beneficiaries). They also will require a new modus operandi: prevention specialists who work in a collaborative way with the beneficiaries (the patient assuming greater responsibility for maintenance of his health) as contrasted with the present acute treatment care system, where the patient is largely a passive recipient--he is "done for" rather than "collaborated with," to use the terms applied by spokemen for the elderly. These groups, including the NRTA-AARP, have been pointing out that older persons are seeking a larger role in their own care. This is fortunate, because it will be an essential ingredient if the move toward postponement is to be successful.

The question then becomes, is there evidence or experience to support the contention that a relatively inexpensive but active, organized, and professionally run prevention-postponement network would cut Medicare outlays for the far more expensive therapeutic care, including especially the need for high cost, hospital-based technological interventions? Rigorous research studies have been minimal, because of a lack of funds dedicated to these kinds of questions, compounded by a shortage of trained investigators; however, the perceptions and activities of many older persons strongly support the contention, and considerable indirect evidence lends credence to it.

A few examples: (1) There is little doubt that the sharp decline in cerebrovascular mortality is related to the fact that, unlike in years past, most people with high blood pressure are now aware of their condition and most are under treatment. Much room for improvement remains, however, especially in high risk minority groups, including those with low incomes. Whereas most of the costs for this simple preventive measure are borne by the individual patients, the savings to Medicare, in terms of a reduction in acute hospital care for prevented strokes and heart attacks must be very great. (2) The significantly lower risks of mortality from lung cancer, digestive organ cancer, heart and cerebrovascular disease, pneumonia and influenza, and accidents and violence in members of specific religious groups including Mormons, Seventh Day Adventists, and those of the Reorganized Church of Jesus Christ of Latter-Day Saints strongly supports the likelihood that life style factors, especially prohibitions of the use of alcohol and tobacco, and possibly an emphasis upon diets including fruits and grains, play a role in chronic disease prevention or postponement. Although the information is not at hand, it would seem reasonable to assume that the cost to Medicare for members of these groups is significantly less than for most others. (3) The protection from noxious exposures in the workplace, including mining, textiles, petrochemicals, and others, leads to reductions in debilitating illnesses in later, retirement years. The nation has as yet barely scratched the surface of the potential for improvements in these settings, largely because of an insufficient supply of industrial hygiene and occupational medicine and nursing specialists. (4) Although the role of exercise in preserving health is not fully understood, to the extent that it improves cardiopulmonary function and helps control weight, it almost certainly has an important place as a preventive measure. Often overlooked is that this generalization also applies to the elderly, about a third of whom never exercise. Good muscle tone guards against falling, a common and very serious problem for the aged. Exercise also promotes better eating and bowel habits and somehow lends a sense of well-being, the lack of which contributes to the depression, feeling of worthlessness, alcohol abuse, overmedication, and sleep disorders so prevalent among the elderly. These conditions lead, almost inevitably, to acute care episodes in hospitals or other settings. They are largely nonmedical problems related to premature dependencies, but they lead to serious medical needs. An active partnership between beneficiaries and properly trained providers could negate the need for much of this preventable expense.

These and other comparable observations suggest that a long range alternative to reducing benefits as a way to cut the number of treatment episodes, and hence to cut Medicare outlays, could indeed be employed. That further reductions of benefits (through increased beneficiary cost sharing), coupled with other policy changes such as prospective reimbursement, and probably increases in contributions to the Medicare Trust Fund may be mandatory over the short term seems inevitable, because of the impending insolvency of the HI trust fund by about 1988. But there are at least four serious defects to these initiatives, in terms of any solution for the problem that must be dealt with for the period from 1988 to the turn of the century: (1) shifting costs from Medicare to the beneficiary doesn't lower total costs and works inequitable hardships on those with low incomes; (2) prospective reimbursement schemes, unless universally applied to all payers, result in additional cost shifting to private payers, who are becoming increasingly resistant to these devices; (3) the solvency of the HI Trust Fund over the long term will require reductions in outlays far greater than those that can be achieved by increased cost shifting, prospective reimbursement, and the like; (4) the public will not accept drastic reductions in Medicare. This latter point is a compelling argument for seeking a solution based upon a reduction in the burden of illness instead of a reduction in benefits. As was noted in a recent ABC News and The Washington Post survey, there was a virtual concensus (84 to 85 per cent) in favor of the statement: "Under no circumstances should Medicare aid to the elderly be cut back." Only 10 per cent disagreed with this statement.

In the light of these biological, ethical, political, and financially pragmatic considerations it is timely to propose as a goal two new broad and related policy changes: (1) implementation of individual or small group services aimed at reductions in the incidences of chronic diseases and of acute exacerbations of chronic diseases and in the reduction of acute injuries and accidents of the elderly and those who will enter this age group; (2) implementation of educational efforts that will reduce the incidences of these chronic diseases. Both objectives, which are not mutually exclusive, share the dual benefits of reducing the burden of illness in the elderly with all of the attendant personal and societal benefits that accrue by so doing, and postponing the inevitable terminal episode. Both of these, when successful, reduce Medicare outlays, and in an equitable manner.

A word about the nature of the needed prevention services may help to clarify what is suggested. First, it is important to point out that certain types of health protection services must of necessity operate in the public sector and are claimants to straight tax support on a programmatic basis. Reference here is not to these services: environmental protective measures, enforcement of laws on use of seat belts, and the like. Rather, the needed services fall into individual services packages or into services that could be dispensed to small groups: screening activities, immunizations, health risk appraisals, dietary counceling, stress reductions, exercise programs, smoking cessation, sleep regulation, and others. These efforts will be most effective if they are reinforced by public educational efforts through the mass media and in other ways, targeted at high risk groups.

What is needed is a network of prevention services centers. Some would be in public facilities such as health departments and other public agencies. Others would be in private nonprofit and proprietary settings, either free standing or integrated within a therapeutic facility. All would have functions ranging from community-wide education and information, such as the Stanford Heart Diseases Program, to services for individuals and groups. All would be organized in a way that would lead to analyses of their effectiveness in terms of reductions in disease incidence rates and in inpatient utilization of therapeutic facilities, both acute and chronic care, and in costs to Medicare and to the beneficiaries.

It would be to the nation's great advantage to commence these activities on a widespread basis as soon as possible. However, certain initial efforts will be mandatory because of some existing problems. (1) Before a full scale professional prevention services system can be considered feasible there must be devised a system for the rational financing of prevention-postponement services. Presently costs of dispensing such services are not known, and the best way to pay for them (voucher or prepaid -vs- fee for service) has not been systematically studied. This is widely acknowledged as one of the most serious defects within the present health services system, and it is clearly a major impediment to the widespread employment of valid prevention strategies. This important matter would be tested carefully in the prevention education and services system proposed. (2) Another present deficiency is lack of experience with the dispensing of professional prevention services to a variety of different populations. Which are valid, and which are perhaps only passing fads? Which are cost-effective, both in a private setting and in the much needed public sector? How should they be integrated with the physician-hospital sector? What is the expected reduction in use of therapeutic services? These and other related administrative and scientific questions need to be explored in a systematic way.

It is proposed that the nation's schools of public health be responsible for development of the intial network of prevention services centers required in order to explore, in a real world setting, the issues noted. Their role would be analogous to the widely acknowledged role of medical schools in not only training future physicians but in developing and staffing the nation's tertiary care facilities. Just as physicians cannot learn medicine without a practice environment, neither can preventionists become fully effective unless part of their studies involve service to and in the community. The testing of the efficacies of the prevention services, their organization, and measures of their costs would be a natural part of the overall endeavor.

The major training sites for the health professionals that could implement an effective national program in prevention are the nation's 23 schools of public health.

The term, "school of public health," no longer adequately describes their mission. Their role of training individuals for the traditional public health sector--individuals skillful in preserving health by assuring safe water, sanitation, and numerous other state, Federal, and local public health programs--is still crucial, but modern public health transcends these traditional roles. Much of their work is prevention-oriented, direct patient care: in maternal and child health, sexually-transmitted diseases, genetic screening and counceling; high blood pressure detection and control; cancer and heart disease control programs; accident prevention.

Increasingly, more public health graduates are also working in the private sector: health systems planning and management at the community level, often for both regional proprietary and nonprofit hospital systems; prevention services management; industrial health and safety services; corporate health promotion programs; health and vital statistics analysis. These expanded activities lend themselves to the proposed role of schools of public health as the key to the nation's prevention services programs in the private sector just as they have already become a chief ingredient in the public sector.

The manpower required to initiate the proposed prevention services system would be of four major types ranging from those with the skills to: dispense prevention services to individuals or groups; present public education programs targeted at high risk groups; design, implement, and manage the centers; those trained to analyze their impact. The latter two types of personnel are already being trained in schools of public health. Some of the first type, the needed preventionists, such as health educators and behavioral scientists are also trained in these schools. Others required for other types of prevention services are already being trained in other health professional schools, including nursing, allied health, dietetics, and medical psychology. Fortunately, many of the prevention services are not, strictly speaking, "medical" in nature and high priced physicians are not always required.

It is proposed that a Federal Trust Fund for Prevention Education and Practice be established and that it would finance the needed operations. These funds, to be set aside by the Health Care Financing Administration of the Department of Health and Human Services, would accrue, based upon the voluntary agreement of therapeutic providers (hospitals and physicians) to accept a reduction of a fraction of a per cent of their Medicare billings (amounting for the first three years to ten cents from each $100 dollars and declining in later years). They would be managed and distributed to qualified schools on a competitive basis. Distribution would be on the basis of the sizes and complexities of the service missions of the separate schools according to guidelines developed, in compliance with some general conditions set forth below.

In conjunction with state and local health departments, industrial groups and unions, private provider groups, and others, schools of public health would be expected to establish prevention service programs designed to reduce risk factors, beginning with present Medicare beneficiaries and those who would become beneficiaries during the first 15 years of the fund. The service efforts could involve individualized prevention programs or group activities or community efforts, but they would not be part-time consultative or technical assistance in nature. Rather, they would involve a permanent work location and staff and a contractual relationship which spells out the school's obligation to the community.

Each school would develop two basic types of model service program: the first, in a private sector setting such as a regional private hospital-operated ambulatory facility supported, over time, by user fees prepaid by individuals or their employers; and the other, a community or public program for which user fees are not practical but where a voucher system may be the best financing system. With respect to the private sector model programs, the reimbursement designs would of necessity be experimental at first, not necessarily plans to fully support the service programs in the private sector. As activities become "self-supporting" they would be separated from Trust Fund support and the Fund's resources could be redirected to other public prevention service efforts, such as in local health departments where the need is especially great. It is a fact that one's state of health and well-being is related to income, poor people having poorer health and needing more therapeutic services than those with higher incomes. Poor elderly people require more health services than nonpoor elderly, and they are therefore especially important to the Medicare system. Professional prevention service programs targeting the low income adult population hold special promise of being cost-effective if these groups can enter the Medicare-eligible years with a reduced and postponed burden of illness. This, in turn, would result in savings to Medicaid, which pays for much of the care of the elderly poor not paid by Medicare.

Concluding Statement

There exists a virtual concensus that strenuous efforts should be made to develop and improve preventive strategies. There are at least four reasons why this should be done:

1. A fundamental precept of public health is that preventive strategies can be implemented and they will lower morbidity and mortality. Examples of such strategies are as ancient as quarantine and as modern as mammography.

2. It is reasonable to believe that new strategies that may be developed (environmental control and life style modification) will be relatively inexpensive to implement and will produce lowered incidences and mortality rates for a number of chronic diseases. Intuitively, most accept Ben Franklin's adage that it is less expensive to prevent than to treat.
3. Alternative routes for the expenditure of "health dollars"--mainly the development of new therapies and the delivery of new services--are, for the most part, of unevaluated cost-effectiveness and, while they may prolong life in some cases, seem not to have made a major contribution to improving the quality of life. It is ironic that criteria for adopting preventive strategies are considerably more rigorous (i.e., proof of cost-effectiveness) than those applied to adoption of new therapeutic technologies, where often the effectiveness *per se* is even in doubt.
4. A modern perception of health is that it is entirely feasible for most human beings to remain healthy, vigorous, economically productive and capable of enjoying life into their late seventies or beyond. But to achieve this goal in a high percentage of people, the major chronic diseases

must be prevented or deferred to ages older than those at which they now strike. We are already seeing the early returns on this prevention/deferral, as evidenced by recent data showing that, during the 1970's, the life expectancy of middle aged adults began to increase substantially. Thus, this "new call for prevention" is a call for the development and implementation of procedures intended to enhance and accelerate a trend already visible in our society.

To achieve these ends, it is proposed that there be consummated a unique public-private partnership consisting of: the voluntary financial contributions from providers of therapeutic services; the nation's schools of public health, their faculties, students, and graduates; and the Federal government, through its administration of the setting in place of valid and needed prevention-postponement services, all under the aegis of the proposed Federal Trust Fund for Prevention Education and Practice.

W.F. Bridgers
October, 1983

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Senator **Durenberger**. Thank you very much.

I am going to run over and cast that vote I predicted, and you can do whatever you want while I am gone. Just don't go too far because I want to come back and ask some questions. So excuse me. We will recess for anywhere from 8 to 10 minutes. [Recess.]

Bill, do you want to come up here? We will go back to our hearing, and we are pleased to be joined by our friend, Dr. Bill Roper, who has impressed all of us during the period of our association with his commitment to public health, former public health officer from the State of Alabama, or something like that.

Dr. Roper. You know it well. Thank you.

Senator **Durenberger**. Yes, and I know much more, but you can do that after we leave. I understand you are going to have a relationship when we finish with the hearing as well.

Let me just ask four or five questions, whatever it turns out.

Is Dr. Clinton here? Do you want to come up here, too? I don't want to slight anybody here today.

Let me begin. I have been making some notes here as I have been listening to the very excellent testimony. Let me ask some of my "all" questions first. I can't tell when any of these occurred to me. Along the way of the last 10 years through sort of reforming, if you will, the health care delivery system by changing the way we pay for it, it has been often suggested to me that we are wasting time; we ought to just change the delivery system. As you watch national policy evolve, at least since I have been here in the last 11, 12 years, it has largely been driven by our concerns about cost. It is largely the cost of health care in the largest sense that is the problem. As far as access is concerned, what are you going to do to constrain the costs? And I got here just at the end of the sort of national regulatory phase, which was health systems planning and certificate of need and hospital cost containment and so forth. But it wasn't the end of the period where we did sort of program funding. We would find a particular need, and we would authorize and appropriate some money toward it, some of which we have talked about today.

We found that that was very expensive way to go about it, so we adopted the notion of changing the way we finance health care. You know about the HMO's and you know about the prospective payment systems that we have introduced into medical care delivery. But I see more and more in my State, particularly in rural areas, that the effect of the changes that are taking place in medical care delivery is to change the way health care is generally being delivered.

I would just ask you to comment on this: The best examples I see are in rural areas where doctors and hospitals and other health delivery services sort of are in the position of competing against each other because one has funding from this source, another has funding from that source, somebody else has this, that, or the other thing. And the communities that are starting to break down some of those barriers are bringing the delivery of health care together so that—and the way I sort of see it developing—and nobody has really developed the complete model, but at the heart of this, where the failures in the system is sort of your medical surgery core. Then around that you have hotels and you have outpatient surgery, you have radiology and pathology and some of your other lab services. You have long-term care. You have therapy. We are running out of therapists, I understand. Then you have mental health, and you have chemical dependency, and you have social and life style services. You have community education. You have this whole variety. You can only see it start to come together in small communities where people think the way I think you do, and you start seeing the arrangements. The hospital is now going into the social service business as well as the health education and health promotion, accident prevention business.

But it strikes me that in one way or another, communities across this Nation are going to have to break down the barriers that currently exist between the various definitions of health in order for the communities of people to be served by this broader definition of health. So maybe, Dr. Henderson, I will begin with you.

You did challenge us to take .1 of 1 percent of Medicare expenditures, I put in from Part A because that is the easiest place to get it right now, the trust fund—although that is going bankrupt by 2002—and fund national disease prevention programs. You didn't say "accidents." I don't know whether there is an implication that we should add accidents to disease. But as we approach the whole issue of prevention programs, I wonder if you wouldn't comment on need to change the way communities actually deliver health and medical services.

Dr. HENDERSON. I think your observation, Senator, is correct, with regard to the trends that one sees in certain of the rural areas at least, where there is a more comprehensive view, and I suspect more of a sense of community between the providers and the community itself.

We have had a number of discussions with those in the academic health centers, and there are a number of those who are looking at a similar set of issues: Is there a way by which we can provide suitable funding in some way to induce academic centers to, indeed, begin to provide some sort of set of services where they look to the health of the community as a whole, rather than concerning themselves only with those who present themselves as being sick?

We are suggesting here that the trust fund approach, would serve, as we see it, to greatly strengthen schools of public health in getting them involved in the community, in the way you are talking about. One of our problems is resources to fund the things that we really have an instinctual desire to do as professional schools, no less than schools of medicine are professional schools treating people. I think through such a mechanism one would see capacity development; one would see, I think, innovative systems developing; and I think they would be different in different parts of the country. People are different, problems are different.

This would be a step, a beginning step, toward providing, if you will, a greater capacity, both in people and institutions and toward the development of exploratory, innovative approaches to deal effectively with this, providing improved health at affordable cost. There are no simple solutions out there to do that, as you well know.

Senator DURENBERGER. Maybe I can go to Dr. Brody because he talked about the clinical public health, and in part when I'm talking about the need to change this whole system, I think you touched a little bit on what you are trying to do in Illinois in that regard.

Dr. **Brody**. The thrust is clearly to move people to the interface where the profession meets the need. Hospital use is declining. People's needs are increasing. Our needy are probably primarily well elderly and marginally well children and teenagers who need points of contact. We in public health are trying increasingly to develop the community as the focus for care. I assume there will be good communities and bad communities, but to keep the focus in an academic health center is self-defeating. We are not teaching health professionals in the setting where they will be practicing for the rest of their lives, and the people who need care are not getting it in an appropriate site that is available to them.

One of our major thrusts is to make academia more accessible and to promote a community approach to solving these problems.

Senator **Durenberger**. Bob?

Dr. **Kane**. Senator, you point out quite correctly that this country really stands out from most Western countries in the fact that it has adopted a marketplace strategy to address the health problems. It seems to me that we face a primary difficulty in that we have misdefined the product. We are essentially selling services when, in fact, what we would like to sell—or to expect from the providers is some change in health status.

It is particularly appropriate, I think, that the two people sitting next to you (Drs. Roper and Clinton) have been two of the leaders in this country in trying to bring to broader attention the need to look at the outcomes of care. If we are, indeed, going to use a marketplace system, then it becomes very important that we provide the correct incentives for what we want those in the market to provide and for what we hold them accountable. We have the techniques using epidemiologic and health services research, to find out a great deal more about what produces positive changes in health status.

Not only are we market-driven but we are also short time frame-driven; we want to see results immediately. As much as we all here applaud the role of prevention, most preventive activities have a reasonable delay factor in terms of seeing their effect. It is very difficult to prevent something yesterday.

So we are constantly driven, whether we are working in the public sector or the private sector, to show immediate accountability. This combination of impatience with a market fixation makes it difficult for us to mount effective programs.

We have fascinating data, even among older people, that suggests that, indeed, cessation from smoking among people in the seventies can show very rapid—that is, within 5 years or less—return to nonsmoker risk for cardiovascular and lung disease mortality. But it is very hard to find an insurance program, whether it is publicly or privately funded, that can wait 5 years to see the results.

Until we can begin to shift our attention to a more appropriate kind of time frame, until we can begin to see health care as, indeed, a community-wide effort, it is going to be very hard—whether we organize people in health maintenance organizations or other forms of prepayment, or whether we continue to do it on a fee-for-service basis—to be able to hold the people accountable for the things we really want to happen.

Senator **Durenberger**. I am sure everybody has a view on each of these, but let me ask another sort of "all" question or general question that deals with—I really was pleased with the breadth of the definition here, whoever organized this, of public health, and particularly Dr. Beasley and Dr. Vernberg and others made reference to environmental health, which pleases me greatly since I have spent so much time on that subject in an entirely different committee—inappropriately, probably, but that is where it is.

I really don't know the answer to this question, but on Sundays when I pick up any newspaper in America and I go to the advertisement section, it is full of opportunities for health care professionals. And I have sort of jumped to the conclusion that we are either broadening our definition of health, or, in our rush to get out of the hospital and stay out of the hospital, we have now created such a wide variety of "opportunities" in the health care field that there has got to be something kind of inefficient in all of this because there are so many people doing something because there is a program or a mandate or something to do it. Or maybe it is just that nobody is going into the field, and that is why all of the ads are there.

But, I mean, if we are going to do this health in the larger definition and we are going to be looking at everything from the environment to life styles to getting out into the community and educating people, to the traditional how do we deal with illnesses and accidents, what is your advice to us at the national policy level in terms of making sure there are qualified professionals available? Anything we need to do or what is the situation in America today as far as professional health care providers are concerned?

Who wants to start with a response to that?

Dr. **Fineberg**. Senator, I will start, if I may.

The Bureau of Health Manpower, in fact, is going to be presenting to the Congress and has just realized its latest assessment of the status of health manpower today in our country. It is relatively easy to count up in certain traditional areas, like physicians and nurses, the numbers that we have and to make some projections about the numbers that are needed. In many of the areas that are central to the concern of the maintenance of health, including the environment, for example, the variety of professionals that are required and the numbers are not as easily identified; but even with those ambiguities, the estimates are that we have available now only about half the number of professionals trained in all aspects of environmental health as we require in our country to face up to all the challenges that we have before us in terms of the chemical threats in the environment and the physical environmental threats and all the others that Dr. Vernberg alluded to.

When you go to all of the other aspects of the kind of people that we need to provide both the knowledge base and the design of programs like those that we have been talking to—the epidemiologists and statisticians, the physicians trained in the practice of health promotion and prevention of disease, the engineers and other specialists who are brought into the field of health—and bring their technical knowledge and apply it to solving these real problems, we are convinced that there are needs for hundreds of thousands and even millions of additional workers dedicated to this field of endeavor.

Now, our problem, in part, is that we don't have an incentive system for bringing people into education, and we have not enough, frankly, institutions like those represented on this side of the table to be able to meet the manpower needs that we actually have as a Nation. If we were to do our jobs, we would each have to, on average, double our capacities of training students. Right now, Senator, the thing that is most worrisome to me is that we have, each of us, I am sure, any number of prospective applicants, people who at stages of their careers could be influenced and directed, energized, excited by these challenges that we are talking about, who, for reasons of financial need are not able to pursue the career that would ultimately be in the public service.

We sometimes joke that we are the one dean at our universities that, on average, lowers the lifetime earnings capacity of our graduate students, because we take a would-be heart surgeon and direct them instead to a career in health promotion and disease prevention. Somehow we have to make it more attractive to people at the critical decision points in their career to bring them into our field. And we think that is a national problem. It is for us a problem of our own institutional practice, but we believe the solution to that can only come from a national commitment to direct the resources that are needed to bring people into the field that, in the long-term, as we have been describing, inevitably will save our country resources, but even more importantly add years of healthy life without the misery of disease to our citizens. That is really behind what we are trying to accomplish.

Senator DURENBERGER. Any of the rest of you want to make comment on that issue? Dr. Vernberg?

Dr. VERNBERG. In environmental health, one of the big problems is the fact that you really need students who have been trained in the sciences. As you know, for about the last 25 years, the number of scientists and engineers that we are training has gone down. And so part of our problem is involved with that.

I guess one of the major problems that I see is that these positions have to be filled, and so they are oftentimes filling them with people who do not have the scientific qualifications in order to do it. Certainly, the small amount of money that we get for traineeships is helpful, but Dr. Fineberg indicated the need is tremendous.

Senator DURENBERGER. Dr. Michael, did you have an observation?

Dr. MICHAEL. Senator, first of all, I would like to ask permission to add to the record those portions of the Seventh Report to the President and Congress from the DHHD-PHS Health Resources and Services Administration on health manpower needs that deal with this very issue. I think you would find them a valuable adjunct to these proceedings. I have a copy that I can give to the clerk.

Senator DURENBERGER. It will be made part of the record.

[The report follows:]

EXECUTIVE SUMMARY

SEVENTH REPORT TO THE PRESIDENT AND CONGRESS

ON THE STATUS OF HEALTH PERSONNEL

IN THE UNITED STATES

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Health Resources and Services Administration
Bureau of Health Professions

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EXECUTIVE SUMMARY

The Seventh Report to the President and Congress on the Status of Health Personnel in the United States submitted by the Secretary of the Department of Health and Human Services responds to the directives of several legislative authorities. The report presents information on personnel in the health professions of medicine (allopathic and osteopathic), dentistry, nursing, public health, allied health, clinical psychology, optometry, pharmacy, podiatric medicine, veterinary medicine, chiropractic, and physician assistants. In addition, the Seventh Report contains a discussion of current and emerging health issues and problems that influence the demand for health personnel, their geographic distribution, and their educational preparation. The Report also contains a discussion of significant cross-cutting health professions issues, such as the underrepresentation of minorities within most health professions educational programs. This underrepresentation affects the racial/ethnic composition of health care providers and, in turn, may adversely affect minority access to health care.

The major findings and conclusions of the Seventh Report are summarized here in three sections: current and emerging health issues; health personnel supply, requirements, and education; and current and emerging health personnel issues and concerns. The full report deals in depth with each of these issues and developments.

Current and Emerging Health Issues

Although many aspects of the health of the United States population have improved in recent years--for example, heart disease mortality in persons 45-64 years of age and stroke mortality among those in the 55-74 age group have declined substantially since 1970--a number of emerging health problems have increased the demand for services provided by health personnel.

o *The American population is aging dramatically. By the year 2030 there will be 64 million people 65 years of age and older, more than twice as many as there are now. Moreover, between 8.7 and 12 million elderly will be in the oldest age group, 85 years and over, in 2030. Elderly living alone are projected to number at least 30 million in 2030, compared to 12 million in 1990. Those with some disability will total 16.3 million in 2030, up from 6.2 million in 1990. Large increases in the demand for health services are expected, not only for care of the sick, but for health promotion and illness prevention services that help reduce the burden of illness and disability of the Nation's aging population.*

- *Infant mortality continues to be a pressing problem. About 38,000 infant deaths occurred in 1988. Even though the infant mortality rate has declined steadily over the past 50 years, the United States ranks 22nd among Nations in infant mortality. The infant mortality rate for Blacks--18 deaths per 1,000 live births--is twice that for Whites. The role of health personnel in reducing infant mortality through pre- and post-natal care is well understood. Provision of needed care can contribute to the reduction of the risk of premature, low-birthweight infants, resulting in healthier babies.*

- *Over 100,000 cases of, and over 59,000 deaths from acquired immune deficiency syndrome (AIDS) were reported to the Centers for Disease Control (CDC) between 1981 and July 1989. In addition, an estimated 1 to 1.5 million persons in the United States are infected with human immune deficiency virus (HIV). AIDS patients require considerable amounts of care from physicians, dentists, pharmacists, nurses, mental health personnel, and many types of allied health personnel. The large number of HIV-infected persons has a major impact on the Nation's health care system and on health personnel since studies indicate that within 10 years more than half of those infected will develop AIDS. The burden of coping with AIDS has created a public health crisis that can only be solved by joint efforts of Federal, State, and local governments, health practitioners, health professions associations and the public at large.*

- *Substance abuse, the abuse of alcohol and drugs, has become a major public health problem in the United States. During the 12 month period ending October 30, 1987, 2.3 million people had been treated for substance abuse, placing a heavy burden on the Nation's health care, mental health, and social services. Substance abuse also adversely affects other health and social situations. Over 50 percent of traffic accidents, including many fatal ones, are related to substance abuse. Pregnant women who are drug abusers are at high risk of having premature, low birthweight and sickly babies, many of whom die during the first year of life. Shared needles by abusers are a major source of the transmission of AIDS. As addiction to alcohol and drugs is now recognized as a chronic and treatable disease, health professionals, including mental health personnel, are increasingly needed to provide services for the prevention, diagnosis, and treatment of this very serious and pervasive health and social problem and its consequences.*

- *Profound changes in the health care delivery system are affecting health personnel supply, demand, and distribution. In response to the continuing escalation of expenditures on health care, now over one-half trillion dollars and over 11 percent of the gross national product, many attempts are being made to contain health care costs. Prominent among these is the prospective payment system for patients insured under Medicare, which has reduced the average length of stay in hospitals,* *but also resulted in a higher acuity level among patients, on average, in short stay hospitals. One consequence has been an increase in the nursing intensity and workload, raising the demand for nursing personnel and the expression of concern about nursing shortages. Shorter lengths of stay have increased the utilization of long-term and home health care and the demand for health personnel to provide those services.*

Emphasis on cost-containment also has led to greater usage of ambulatory services. In another development, the health care system has been moving towards "corporatization" through amalgamation of health care entities into larger multi-agency "systems" and increased competitiveness through a variety of choices in health insurance and the ways in which health services are delivered and by whom, such as the growth of prepaid and capitated insurance programs.

Desire to moderate increases in health care expenditures without adversely affecting quality of services, increasing interest in developing appropriate and effective procedures and treatments, public demand for identification of practitioners who provide substandard medical care, and concern about costs of medical malpractice have also contributed to an intensified focus on the quality-costs parameters of the health delivery system.

Demand for more aggressive identification and tracking of practitioners who provide substandard care resulted in enactment of the Health Care Quality Improvement Act of 1986 (Title IV, Public Law 99-660). A prominent part of this legislation is establishment of a National Practitioner Data Bank (the Bank). The Bank will receive and release information on: (1) payments made for the benefit of physicians, dentists, and other health care practitioners as a result of medical malpractice actions or claims; (2) licensure disciplinary actions taken by State medical and dental boards; (3) professional review actions taken by health care entities, such as hospitals or health maintenance organizations, which adversely affect the clinical privileges of a physician or dentist for more than 30 days if the actions are based on peer review of the practitioner's professional competence or conduct; and (4) adverse actions taken by professional societies on membership of physicians and dentists. In addition, the Medicare and Medicaid Patient and Program Protection Act of 1987 (section 5, P.L. 100-93) expands the Bank's information base to include adverse licensure actions involving all licensed health practitioners and health care entities. The Department is also markedly expanding its science-based research program intended to improve the quality of health care. This effort should reduce health care costs by eliminating unnecessary and *inappropriate health care services. Major components to the Department's medical treatment effectiveness are significant expansion of research on patient outcomes and clinical effectiveness; expanded collection, development, and analysis of clinical and claims data; and dissemination of research findings and data analysis.*

Research findings will be transferred to practitioners through professional organizations and journal publications, public education, medical school faculties and by integration of findings into medical education.

Health Personnel Supply, Requirements, and Education

- *Following the increases of the 1970s, the number of applicants to health professions schools has declined in most health fields since 1980. The sharpest decline has occurred in dental schools, a 44 percent decrease. The decline in allopathic medical schools was 27 percent during this period. However, although applicants to allopathic medical schools have declined, first-year enrollments rose slightly, from 16,686 in 1987-1988 to 16,785 in 1988-1989. The number of admissions to nursing schools fell from a peak of nearly 124,000 in academic year 1984 to under 91,000 in 1987, but rose again to over 94,000 in 1988.*

- *About 80 percent of all health personnel are women. While this reflects the traditional predominance of women in nursing and in many allied health disciplines, the proportion of women in professions such as medicine, pharmacy, and dentistry, once composed mostly of men, has been increasing sharply. In 1988-1989, the percentage of women enrolled in medical schools reached an all-time high of 35.1 percent. One-third of enrollees in dental schools are women and schools of pharmacy and veterinary medicine have more female than male students. The increase in female enrollees has kept the enrollment decline in many professional schools from being even steeper than it actually has been.*

- *Minority enrollments in a number of health professions, both total and first-year, have not changed significantly in recent years. However, Black enrollments have increased less than those among other minority groups. Although the percentage of Blacks among first-year enrollees in medical schools has risen since 1980 from 6.6 to 7.2, their numbers have not changed significantly. During the same period, the percentage of Asian Americans/Pacific Islanders, rose from 3.3 to 12.4 percent. Numbers of Asian students have increased significantly in many health professions schools.*

- *Along with declines in enrollments, the numbers of graduates from health professions schools have also declined, although not as sharply. Medical school graduates declined from an all-time high of 16,343 in 1985 to 15,646 in 1988-1989. Graduations from basic schools of nursing have declined 8 percent from a high of over 80,000 in 1985. However, the number of graduates from most health professions schools remain higher than in 1970, which was the beginning of a long period of expansion.*

- *The number of active health personnel continued its steady rise since 1970 despite declines in the numbers of new graduates because the number of new entrants to the professions exceeded losses due to deaths, retirements, and other reasons. The supply of registered nurses has more than doubled, from 750,000 in 1970 to over 1.7 million in 1988. Relative increases in other professions, including allied health personnel, while not as great, have outpaced population growth so that ratios of heath personnel to population have continued to increase and are now at their highest levels.*

- *The growth in the supply of many health professions is expected to slow down in the future, particularly during the years 2000 to 2020, due to the attrition among aging and retiring active health personnel and continuing smaller graduating classes. For some groups, such as nursing and dentistry, the projection is that the supply in 2020 will be lower than it is today. Today's shortage of nurses, attributable to a rising demand for nursing services because of higher levels of patient acuity and technological advances, causes concern about projections of a smaller supply of nurses in the future. The emerging health issues and problems, and the major changes occurring in the health care delivery system and in the educational system for health professionals, lead to concern about whether the supply of health personnel will be adequate to meet the Nation's requirements for health care in the future, particularly after the year 2000. Although the aggregate physician supply may be adequate to meet future requirements, it appears likely that shortages may continue to exist in some specialized areas and geographic locations, as well as in nursing, public health, and some allied health fields.*

Current and Emerging Health Personnel Issues and Concerns

- *Contraction of the applicant pool and declines in enrollments and graduations have been occurring in many health professions education programs. Declines have been attributable to changes in age distribution of the population--the number of people 18 to 25 has fallen nearly 10 percent between 1980 and 1987; to the relatively higher earning potential and starting salaries in other fields; and to the increasing costs of higher education and rising levels of indebtedness associated with pursuing health professions education. The substantial growth in the supply of health personnel in the past 20 years has provided a solid foundation to meet future requirements, so that the decline in enrollments and graduations will not adversely affect the supply of health personnel in the short run as new graduates still will exceed attrition. However, the situation may not be as favorable after the year 2000. In addition, the utilization of health services may well increase in the future because of such factors as the Nation's aging population which must be taken into consideration when assessing any future balance between supply and demand.*

- *More primary care practitioners are needed to provide services for patients in their initial contact with the health care system. Expansion of primary care will improve access to care, promote the enhancement of health and prevention of illness, and improve the efficiency and effectiveness of delivery of care. Despite these widely recognized benefits, the trend in medicine has been towards specialization, driven in part by the reimbursement system. Recent developments such as the resource-based relative value scale proposed for paying physicians under Medicare may redress the mismatch between the number of health personnel in primary care and the number required.*

- *Recent studies and surveys have revealed shortages of allied health and public health personnel, in geriatrics and gerontology, and in nursing. In allied health, the demand for physical therapists, medical record technicians, radiologic technologists, and occupational therapists is projected to increase by over 50 percent by the year 2000. In public health, high levels of demand for various occupational specialties in environmental health may exceed current supply. Other public health personnel, such as clinical psychologists, epidemiologists, biostatisticians, and public health nurses, moreover, are in the forefront of addressing major new health problems--AIDS, substance abuse, and infant mortality.*

- *Certain racial/ethnic minority groups are underrepresented among health care personnel. In 1985, Black and Hispanic physicians constituted only 3 percent each of total physician supply, while the Black and Hispanic population was 12 and 7 percent respectively of the total U.S. population. Underrepresentation is due to a variety of factors, including inadequate educational preparation, poor career counseling, high costs of health professions education and lack of institutional commitment. Motivation to increase minority representation derives not only from a need to assure equal access to health professions education to all population groups, but from a need to provide health care to minorities and other disadvantaged populations, which is often met mainly by health professionals who themselves are minorities.*

- *Although some improvements have been made in health status by improved access to health care, large segments of the Nation's population still face formidable barriers to adequate care. These include the 32 million estimated uninsured people and the millions of disadvantaged Americans living in inner cities and in rural areas. Health personnel from all disciplines are a key to the alleviation of access problems. Related solutions include more emphasis on primary care and provision of services through a multidisciplinary approach.*

- *As pressure increases to contain health care expenditures, there will be a corresponding emphasis on payment for cost-effective and efficacious treatment and procedures by adequately trained health personnel. The education of future health care providers will need to expose students to concepts of quality assurance, risk management, and outcome-orientation that should result in more effective and safer clinical practice.*

- *High quality and timely data and solid analytical methodologies to support health profession analyses and projections are needed to enhance the policymaking process. Concerns over data inadequacies and obsolescence have grown in recent years. Some data on personnel supply, provided by professional associations such as the American Medical Association, are excellent. Data for other professions, such as those in allied health and public health are much less current and complete. Because of size and complexity, nurse supply data--gathered periodically on a sample basis--are costly and difficult to obtain. Personnel data related to minority issues also continue to be deficient. New approaches by public and private agencies and organizations are being developed to make more valid estimates of present and future supply and distribution of health personnel.*

SEVENTH REPORT TO THE PRESIDENT AND CONGRESS

ON THE STATUS OF HEALTH PERSONNEL

IN THE UNITED STATES

March 1990

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service
Health Resources and Services Administration
Bureau of Health Professions

DHHS Publication No. HRS-P-OD-90-1

PREFACE

This Report to the President and Congress on the Status of Health Personnel in the United States is the seventh biennial report on the Nation's health care personnel. It is submitted by the Secretary of Health and Human Services to the President and Congress in compliance with a number of legislative authorities. The Report provides information on physicians, physician assistants, dental personnel, pharmacists, optometrists, podiatrists, veterinarians, nursing personnel, public health personnel, allied health personnel, and chiropractors. This information should be of value in understanding major personnel changes that are now occurring and that may affect the Nation's health care delivery system in the future.

As in previous reports, the present report provides selected information on characteristics of these health personnel disciplines and on students preparing for these disciplines and their schools. It includes projections of personnel supply to the year 2020, by discipline, and discusses whether the Nation's requirements for health personnel are likely to be met.

While the total number of health providers has continued to increase throughout the 1980s, a variety of health and health personnel issues have surfaced that are having a significant effect on the Nation's health care delivery system, including major changes in the structure and financing of medical care. Among these issues are demographic developments, especially the growing population over age 65 that requires personnel with geriatrics training, the growing AIDS incidence, the wide-spread substance abuse problem, the nursing shortage, declines in health professions applicants and enrollments, and the persistent underrepresentation of minorities among health personnel.

These and other important developments and issues and their implications for health personnel are discussed in three new chapters (Nos. III-V). Individual health professions mentioned earlier are discussed in detail in separate chapters (Nos. VI-XVI).

The Report was prepared in the Bureau of Health Professions, Health Resources and Services Administration, Robert G. Harmon, M.D., M.P.H., Administrator, Assistant Surgeon General. It was planned, coordinated, and compiled by the Bureau's Office of Data Analysis and Management, Howard V. Stambler, Director. Principal contributions were made by the Division of Associated and Dental Health Professions, the Division of Disadvantaged Assistance, the Division of Medicine, the Division of Nursing, and the Division of Quality Assurance and Liability Management. Other offices and agencies of the Department also have provided contributions and assistance.

Public Health Manpower Concerns

Adequate, timely data on professionals employed in public health are not available. Schools of public health have begun to compile routinely educational data concerning numbers of students and their characteristics, but there are few data sets on personnel in the work force. As discussed in chapter IX of this report efforts must be made to define the public health work force, develop systematic methods to obtain data, and improve methods for estimating personnel supply, demand, and requirements.

In the absence of hard data, reliance has been placed on the judgement of experts expressed in workshops. Since the experts declare that severe problems exist in public health education and practice, confirmation by valid and reliable data is essential. The task is complex. Professional categories in public health are diverse, imprecisely delineated, and frequently overlapping. Personnel are employed in such diverse settings as government agencies, foundations, and private companies. Attempts to improve data on public health personnel depend on long-term collaboration among governments at all levels, educational institutions, and the private sector.

Shortages of Public Health Personnel

Previous reports to Congress on health personnel have summarized evidence that indicates shortages of public health personnel as well as other concerns. Recent studies of the environmental health work force provided in this report and a major report published by the Institute of Medicine (IOM) in 1988 further document the problems of educating public health professionals and maintaining an adequate work force (DHHS, 1988; IOM, 1988). The IOM study concluded that a major reason for inadequacies in the provision of public health services was lack of well qualified professionals. Furthermore, the study observed that "some schools have become somewhat isolated from public health practice" and declared that "schools of public health establish firm practice links with State and/or local public health agencies."

Large numbers of personnel working in environmental health, public health nursing, public health nutrition, health education, public health dentistry, and health administration have not received basic preparation concerning the theories, principles, and methods of public health. In addition, many public health professionals who initially were adequately educated have not had access to continuing professional education during their careers because of lack of proper materials, courses, and financial/workplace constraints. These factors, combined with the conclusions of the IOM study that employers are concerned that recent public health graduates are not receiving education relevant to practice in public agencies, strongly suggest there are serious deficiencies in education for public health personnel.

Shortages of public and community health personnel currently exist in the following specialties: epidemiologists, biostatisticians, several environmental and occupational health specialties, public health nutritionists, public health nurses, and physicians trained in public and preventive medicine.

Compounding the problem of shortages of public health personnel is that a declining number of physicians, scientists, and engineers are obtaining education in public health. These professionals are needed to address a wide variety of problems identified in Objectives for the Nation (DHHS, 1980). Physician epidemiologists are in particularly short supply. Engineers, toxicologists, chemists, and other scientists are needed to find solutions to numerous environmental health problems. Few nutritionists enter public health training, especially those pursuing doctoral education. Many public health problems are more severe in minority populations, yet few minority professionals choose careers in public health.

Trained public health personnel are needed to address current major health problems and issues. A brief description of these issues follows.

Environmental Health Education

Table IV-F-1

Environmental Health Professional Providing
Public Health Services, 1987

Additional Specialty	Supply	Need Added Training	Persons Needed
Air/Water	104,000	0	16,500
Milk/Food/Inst. Mgrs.	36,000	6,000	17,000
Hazardous Mgrs.	10,000	5,000	65,000
Occupational Hlth.	69,000	25,000	2,500
Other	16,000	1,500	20,200

A recent study concludes that there is currently a shortage of many environmental and occupational health professionals (DHHS, 1988). The study estimates that in 1987 there were 80,000 environmental health professionals and an additional 155,000 other professionals providing public health services (table IV-F-1). At least 40,000 of these 235,000 professionals need further training, and more than 120,000 additional professionals are needed.

According to a recent workshop on environmental health training, the system for educating environmental health professionals is experiencing many difficulties (DHHS, 1989a). The U.S. Public Health Service (PHS) was urged to take the lead in developing a national plan for education of a new cadre of environmental public health specialists and to convene a coordinating group on a regular basis to consider improvements in undergraduate, graduate, and continuing education. It was recommended that a portion of all funds appropriated for environmental activities be set aside for the education and training of personnel to implement these programs.

Health Promotion and Disease Prevention

Many of the Surgeon General's goals for health promotion and disease prevention by the year 1990 have not been met (DHHS, 1986). If the Nation is to meet a new set of objectives being developed for the year 2000, we must have an adequate supply of well trained health professionals with skills in health promotion and disease prevention (DHHS, 1989b). Toward this end, the Bureau of Health Professions (BHPr) conducted a series of studies in 1984. Recommendations were developed on faculty and curriculum development, student selection, accreditation and certification standards, and development of closer links between industry and the health profession education community. The recommendations represent a comprehensive strategy that remains relevant to obtaining national public health goals for the year 2000.

HIV/AIDS

The HIV/AIDS epidemic represents the most serious challenge to the public health system of the twentieth century. Major responsibility for this deadly and complex epidemic will fall on public health agencies. The public health work force increasingly will be responsible for a variety of activities related to HIV/AIDS, including acute, long term, and hospice care; financing of complex and expensive treatment for the medically indigent; evaluation of programs; working with the media and health professionals to educate the public, change behavior, and discourage spread of the epidemic; collecting accurate epidemiological data; and managing these programs in a cost effective manner. A prototype HIV/AIDS continuing education curriculum for public health professionals is being developed by the Bureau of Health Professions to encourage and accelerate education of the public health work force concerning HIV/AIDS through the AIDS Education and Training Centers Program and professional associations.

Substance Abuse

Substance abuse, in the form of cocaine, heroin, and various hallucinogens, is a public health problem of epidemic proportions. It threatens the youth of the United States, exacerbates other public health problems such as the HIV/AIDS epidemic, and demands the attention of properly educated and motivated public health professionals. While control of drug abuse must be the combined responsibility of government and the private sector, the public health work force at the local, State, and Federal levels increasingly will be involved in controlling the problem. This involvement includes effective public education to control demand for drugs; planning, financing, implementing, managing, and evaluating treatment programs that increasingly will become the responsibility of public health agencies; and working with other segments of government, such as law enforcement/prison, immigration, and custom authorities. The public health work force must be prepared to address the epidemic of drug abuse through basic educational preparation and professional development efforts.

Geriatrics

Providing comprehensive health services to the growing population over 65 years of age is complex and expensive. Public agencies are increasingly being required to plan, implement, and evaluate geriatric health care programs, especially for the medically indigent population. However, the public health work force has received very little training in the development and implementation of geriatrics activities. Curricula in schools of public health must be improved and training materials for the work force must be developed. The Bureau of Health Professions is developing an intensive short-term curriculum for practicing public health professionals that also can be used by the Geriatric Education Centers, schools of public health, and professional associations to help educate and sensitize the public health work force to issues and approaches to geriatric problems.

Chapter IX

PUBLIC HEALTH

Introduction

Significant public health manpower concerns were discussed in chapter IV-F. This chapter presents data on educational developments, supply, and needs for major categories of public health personnel including environmental health personnel and health educators.

The Institute of Medicine's (IOM) study The Future of Public Health states that organized community efforts to prevent disease and promote health are valuable and effective (NAS, 1988). Yet, public health activities in the United States have been taken for granted and are in "disarray." The IOM report discusses the need for well-trained public health professionals and delineates a number of problems that currently exist in meeting this need. The Bureau of Health Professions and The Centers for Disease Control have jointly funded a project that will respond to concerns in the IOM report that education in schools of public health is not adequately preparing students for practice in public agencies. The project will allow educators, employers, and practitioners to participate in a series of work groups to develop action steps for making education more relevant to practice.

Previous reports to Congress have concluded that there are shortages of personnel in several specialties in public health and that the need for these personnel will grow due to several major trends:

- *Concern over degradation of the environment is growing, including indoor and outdoor air pollution, hazardous waste disposal, and safety of the water supply.*
- *Behavior-related disorders have become widespread and are drawing attention. Substance abuse, unintentional injuries, and early pregnancy problems continue to plague children and young adults.*

- *New generations of infectious diseases -- most notably acquired immune deficiency syndrome (AIDS), but also legionnaires' disease, toxic shock syndrome, and others -- require surveillance, intervention, education, and research. It is expected that HIV/AIDS will be a major burden on the Nation's public health agencies. Because of the low probability of an early effective cure, HIV/AIDS education and preventive strategies are the most effective public health measures. HIV/AIDS education must be provided to public health and health care professionals to develop the skills required to diagnose and prevent spread of HIV/AIDS viruses.*

- *Special population groups such as the elderly, poor, disadvantaged, and rural, migrant, and immigrant populations face difficult access and costly health problems.*

- *Among the highest priorities are ensuring a healthy start in life for infants and enhancing the health of their mothers through focused health promotion activities.*

Supply of Public Health Professionals

Current supply of public health professionals is estimated to be 220,000 with 280,000 other professionals also providing public health services (table IX-1). The supply of professionals and their adequacy in three fields will be discussed: environmental health, health education, and public health dentistry.

Table IX-1

Supply of Public Health Professionals, 1989

Specialty	Public Health Professionals	Other Professionals
Environmental and Occupational Health (DHHS,1988b)	80,000	155,000
Public Health Nurses (DHHS,1984c)	50,000	65,000
Health Services Administrators (DHHS,1984b)	45,000	40,000
Health Educators (DHHS,1982)	21,000	4,000
Public Health Nutritionists (Moore,1985) (Kaufman,1986)	6,000	4,000
Epidemiologists (Williams,1985)	3,400	1,200
Biostatisticians (DHHS,1982)	3,000	500
Others	11,600	10,300
	220,000	280,000

Source: Estimates prepared by the Public Health Professions Branch, Bureau of Health Professions, Health Resources and Services Administration, Public Health Service, Department of Health and Human Services, 1989.

Environmental Health

The Sixth Report to the President and Congress on the Status of Health Personnel in the United States discussed in detail available information on the education and utilization of environmental and occupational health personnel. Reports and studies were presented by the Environmental Protection Agency, National Academy of Sciences, National Environmental Health Association, American Industrial Hygiene Association, National Institute of Environmental Health Sciences, and others. To help close the information gap, Bureau of Health Professions funded a study and workshop to evaluate supply and demand and need for environmental health personnel (DHHS,1988b). Workshop participants represented a broad spectrum of environmental health areas and all levels of government, private industry, academia, and professional associations. According to available data and estimates made by workshop participants, there were approximately 235,000 professionals providing environmental health services in 1987 (table IX-2).

Only about 80,000 have formal education in environmental health sciences and can be called environmental health professionals. Another 155,000 were professionals with relevant skills, such as engineers and chemists, who were engaged in environmental health activities, but who have no training in environmental public health. There were also about 480,000 technicians and operators for a total work force of 715,000.

Table IX-2

Environmental Health Professionals, 1987

Specialty	Professionals Environmental Public Health	Other
Air Quality Workers	4,000	14,000
Water Quality Personnel	16,000	70,000
Milk/Food Sanitarians	8,000	2,000
Institutional Health	5,000	21,000
Env. Epi/Env. Tox	3,500	0
Hazardous Materials Mgrs.	300	9,700
Industrial Hygienists	11,000	0
Occup. Health/Safety	25,000	33,000
Land Use/Housing/Vector	4,000	4,000
Solid Waste Managers	1,000	1,000
Injury Control Workers	100	300
Academicians	2,100	0
	80,000	155,000

Source: DHHS, 1988b.

There are large shortages of environmental and occupational health personnel. Of the 235,000 professionals in the 1987 work force about 40,000 needed additional training and 120,000 additional individuals are needed in the work force (table IX-3).

Most environmental programs involve administration of environmental laws. Thus, a large portion of the personnel are employed in government agencies. Practitioners are also employed by industry, educational institutions, consulting firms, and other parts of the private sector. Even though all sectors of society should be concerned about environmental work force problems, workshop participants concluded that protection of the environment is primarily the responsibility of all levels of government. They recommended that the U.S. Public Health Service take the lead in developing a plan " to delineate the necessary training and education of the work force...." In response to this recommendation the Bureau of Health Professions sponsored an "Environmental Health Faculty/Employer Forum" and an analysis of a survey of environmental health staff in State and local health departments. A brief summary of these projects follows.

Table IX-3

Needs for Environmental Health Professionals, 1987

Specialty	Professionals Need Additional Training	Additional Individuals Needed
Air Quality Workers	0	0
Water Quality Personnel	0	16,500
Milk/Food Sanitarians	500	7,000
Institutional Health	5,500	10,000
Env. Epi/Env. Tox	0	500
Hazardous Materials Mgrs	5,000	65,000
Industrial Hygienists	0	2,500
Occup Health/Safety	25,000	0
Land Use/Housing/Vector	1,000	11,000
Solid Waste Managers	500	3,500
Injury Control Workers	0	5,000
Academicians	0	200
	37,500	121,200

Source: DHHS, 1988b.

The "Environmental Health Faculty/Employer Forum" was convened in Ann Arbor, Michigan on May 1-4, 1988 (DHHS,1989a). Workshop participants included academicians, representatives from all levels of government, industry and other private sector employers. Experts at the Forum concluded that academic institutions educating environmental health professionals face a crisis in student recruitment, curricula, and relevance of their programs to community needs. Among difficulties identified were:

- *Shortcomings in communication, decision making, leadership, and management;*
- *Students who are not learning to think creatively and solve problems;*
- *Lack of resources for training and technology transfer;*
- *Faculty having difficulty in keeping up with the state of the art of the profession; and*
- *Continuing education activities that have not developed a public health perspective, especially in dealing with multiple systems and health effects.*

Many of the problems are related to defining the scope of the profession including essential competencies and quality measures. Workshop participants urged academic, professional, and employer groups to convene an ongoing coordinating group to consider improvements in undergraduate, graduate, and continuing education in the hope that such a council would facilitate agreement on roles, responsibilities, and education for environmental health personnel.

During 1987 the National Environmental Health Association conducted a survey of State and local health department staff (NEHA,1989). Responses were received from 30 State agencies including four that provided data on all the local departments in their States, and from 931 other local health departments.

Responding State health departments reported employing 5,230 environmental health personnel of whom 1,114 were registered sanitarians. Environmental health and environmental protection responsibilities are often split between two or more State agencies. Because this survey covered only health agencies, it did not identify the total environmental health work force at the State level.

The response from local agencies was found to be representative of the country as a whole. Local health departments reported 10,656 employees in environmental health programs. Seventy-four percent of local agencies are small, employing 10 or fewer environmental health staff -- 35 percent have two or less. Local health agencies also reported 397 vacancies, a vacancy rate of 5.3 percent. They employed 4,656 registered sanitarians, about 44 percent of all environmental health employees. Per capita expenditures in the regions ranged from $2.20 to $3.82 with an average of $2.74. There was an average of one local environmental employee per 13,600 population, and an estimated 20,000 total environmental health staff in local health departments nationwide.

Health Education

Since 1978 a series of studies and other activities have been conducted on educational preparation, roles and functions, and need for health education specialists (health educators). With establishment of the National Commission for Health Education Credentialing, Inc. in 1988, a national voluntary professional credentialing system was created. As of May 1989 approximately 1,000 persons had received charter certification. Basic information has also been obtained by the commission on about 200 educational programs, and plans are underway to further strengthen professional health education programs and to develop a system for continued professional development.

Public Health Dentistry

The role of dental public health specialists is increasing (Lotskar,1985). In addition to the traditional role in public agencies, public health dentists are becoming more involved in school and workplace programs. They also are involved in development of government programs to provide dental benefits for the elderly and indigent and to diminish cultural and psychological barriers to care (ADA,1983). In 1988 there were 137 certified public health dentists. The American Association of Dental Schools estimated a need for 156 public health dentists in 1985, 211 in 1990, 262 in 1995, and 304 by 2000 (AADS,1980). In 1985 only 16 percent of State dental directors and 6 percent of the directors of city and county units were filled by board certified public health dentists (Lotskar,1985). Thus, many of the dentists serving in public agencies have not received basic preparation in public health principles.

Educational Developments

There are 24 accredited schools of public health. The schools, located in 8 private and 16 public universities, have a combined enrollment of more than 10,000 students, and employ more than 1,400 faculty members (ASPH,1989). They graduated more than 3,400 students in 1987-88.

Trends reported in the previous report to Congress remain essentially the same:

- *Applications, after remaining constant at about 10,000 from 1982-83 through 1985-86, increased to more than 11,000 in 1987-88.*
- *Enrollments continue to grow (10,761 in 1987-88).*

- *The current student body is 60 percent female, 16 percent foreign, and of U.S. students 19 percent are minorities.*
- *Two-thirds of students are enrolled in four program areas--health services administration (28 percent), epidemiology (15 percent), environmental sciences (13 percent), and behavioral sciences (10 percent).*
- *Nearly one-third of students are enrolled part-time.*
- *About 27 percent of the U.S. graduates in 1986-87 were physicians, dentists, and nurses.*
- *Expenditures by the 24 schools totaled $426 million in 1987-88 with 40 percent from federal sources (down from 55 percent in 1974-75).*

A survey was conducted by the Association of Schools of Public Health of graduates of the 24 schools of public health in 1986 (Magee,1987). Key findings, with comparisons to surveys in 1978 (Hall,1982) and 1981 (Licwinko,1982), are summarized below:

- *The median age of graduates is 31.*
- *Of 1,610 U.S. graduates who responded, 82 percent were employed, 12 percent were enrolled in an educational program, and 103 or 6.4 percent were unemployed (21 of these were not seeking employment). Unemployment rates were 6.5 percent in 1978 and 9.3 percent in 1981.*
- *About 25 percent of graduates return to their previous employer.*
- *The largest employer of graduates continues to be hospitals (19 percent), followed by universities (17 percent), State and local health departments (14 percent), and federal agencies (10 percent).*
- *There continues to be a slight decrease in government sponsored employment -- 52 percent in 1978, 50 percent in 1981, and 47 percent in 1986.*

- *Salary levels of recent graduates continue to increase, from a median of $21,600 in 1981 to $28,000 in 1986.*

- *The 1986 graduates had significantly less traineeship support and relied more on full-time jobs, loans, and personal savings to finance their education. Those receiving U.S.Public Health Service traineeships fell from 49 percent in 1981 to 31 percent in 1986.*

- *One-third of all graduates had an advanced degree prior to entering a school of public health.*

- *Nearly 60 percent of graduates had more than three years health-related work experience.*

- *A large majority of graduates found employment in their specialty soon after graduation.*

Schools of public health continue to report a shortage of qualified faculty, especially physicians, but also environmental epidemiologists, toxicologists, nutritionists, nurses, industrial hygienists, mathematical statisticians, and computer specialists. Salary differentials between universities and industry suggest that recruitment problems will continue unless career development incentives are provided to faculty.

In 1986-87, 59 graduate health services administration education programs were members of the Association of University Programs in Health Administration (AUPHA) including 11 in schools of public of health, 5 in Canadian programs, and 9 unaccredited programs. Fifty were accredited by the Accrediting Commission on Education for Health Services Administration. Thirty-seven were located in public and 22 in private institutions (AUPHA, 1988). Key trends in these programs are listed below:

- *Enrollment in master's level programs peaked at about 5,700 in the late 1970s and early 1980s and then began to decline. In recent years the enrollment level has been about 4,500 to 4,700 students per year (4,572 in 1986-87).*

- *Women have comprised over 50 percent of the student body since 1980 and were nearly 62 percent of the enrollment in 1986-87.*

- *In the last five years the number of graduates has ranged from 1,489 to 1,797, and averaged 1,630.*

- *Minority enrollment in graduate programs in 1986-87 was 10.5 percent, down from 15.4 percent in the peak enrollment year of 1979.*

- *In 1986-87, 45.3 percent of graduate level students were part-time.*

Schools of Public Health have received an authority for capitation support under Section 770 of the PHS Act since 1959 and traineeship support for students since 1957 under Section 792. Capitation support has remained between $5 and $6 million since 1970; traineeships were funded for $7 to $9 million between 1970 and 1981, decreasing to about $3 million since 1982.

Total support from the Bureau of Health Professions to schools of public health for Fiscal Years 1979-1988 was approximately $112 million (DHHS, 1988c). With passage of the Health Omnibus Programs Extension of 1988 contained in P.L. 100-607, institutional support will be phased out by 1991 and replaced by an authority for special project grants.

Accredited graduate programs in health administration have received institutional support (Section 791 of the PHS Act) and traineeship support for students (Section 791A) since 1978. Institutional support began at $3 million annually for three years and has been at about $1.5 million since 1982; traineeships began at $1.5 million per year and have been at about $500,000 since 1982.

Key information on support provided by these grant programs is given below.

- *About 1,900 students per year have received traineeships in recent years; about 50 percent of these, in health administration; more than 100 students per year have received traineeships to study epidemiology, environmental health, and health education.*

- *Average award per student in public health has been about $2,000 and about $1,300 in health administration.*

Public Health Personnel Problems

Shortages of personnel are likely for several of the public health specialists: epidemiologists, biostatisticians, several of the environmental and occupational health specialists, public health nurses, public health nutritionists, and physicians trained in public health and preventive medicine. The last four Reports to Congress have documented the available information relative to these shortages and several new studies are presented in this report. However, supply and requirements for public health personnel have not been analyzed as precisely as those for other health professionals. Methods for collecting this information have been developed, but the private sector has been reluctant to conduct the necessary data collection activities due to high costs and lack of resources (DHHS,1988a).

The Bureau of Health Professions is currently working with the American Public Health Association, Association of Schools of Public Health, National Association of County Health Officials, Public Health Foundation, and several public health specialty societies to develop joint efforts to resolve the lack of data on public health professionals. A steering committee has been working during the last year to develop recommendations for solving these data problems (DHHS, 1989). Their report contains the following key recommendations:

- *More systematic and useful data collection is needed to determine the extent to which the continuing problems in public health are related with the workforce.*
- *The Consortium developed an analytical system with two purposes: (1) to count and analyze, in a systematic and incremental manner, the public health workforce and (2) to consider the workforce implications inherent in addressing specific public health problems and objectives.*
- *They also recommend the establishment of an ongoing Consortium made-up initially of six professional associations and two Federal agencies. A framework for the new organization was established by the Steering Committee, including goals, objectives, and organizational structure. It was recommended that the American Public Health Association convene the initial consortium meeting and that the Federal Government exercise leadership in securing resources to develop and sustain the analytical system.*

Conclusions and Recommendations

Although adequate information on the public health work force does not exist, information obtained from experts attending workshops and the limited data that are available suggests there is a shortage of public health professionals and a growing crises in public health education. The following recommendations are made to solve these problems:

1. Obtain better data on public health personnel through joint Federal/State and local government efforts, including professional associations that represent the agencies.

2. Conduct studies in order to develop methods for making education of public health professionals more relevant to practice in public agencies.

3. Enrollment in schools of public health and other graduate programs in public health should be increased to alleviate shortages in certain specialties.

4. Schools of public health, departments of preventive medicine, and other educational programs should intensify recruitment efforts to attract physicians, scientists, engineers, and minorities to careers in public health.

5. More health professionals need skills in health promotion and disease prevention. In order to increase the numbers with these skills, health professions faculty, curriculum, student selection, accreditation, and certification standards must all be modified.

6. Education for public health professionals must include more emphasis on HIV/AIDS, substance abuse, and geriatrics.

7. Since there are large shortages of certain environmental health personnel as well as an educational system that needs improving, a national plan for the education of a new cadre of environmental public health specialists is needed.

8. Continuing education activities and support for current public health professionals to obtain additional education should be provided.

Dr. MICHAEL. Second, I think you both ask the question and give insight to the answer. Is there a solution to the notion of this burden of cost? The solution is present in your own comments. In fact, we must divert our efforts from treatment of disease and trauma toward efforts for the promotion of health and prevention of disease. The latter saves costs.

Public Health institutions such as ours, and others that we can collaborate with, provide that kind of opportunity, the incentives and the support needed must come from the Congress. One support incentive in particular is to provide us with the resources at the appropriate time in the form of scholarships, as Dean Fineberg has said, and the like that will permit us to encourage people to make into preventive medicine, into occupational health, and into a variety of related occupations.

The fact that you see so many health occupation advertisements in the newspapers is no surprise as we are looking at an industry using 12 percent of the gross national product. In the State of Hawaii, health is the third largest industry.

Senator DURENBERGER. Several of you have referred to life style and so forth. In the speeches that I make that praise President Reagan—he was Bill's boss; mine, too, sort of—I say the two things he reminded us of are those sort of old-fashioned values that my parents tried to teach me but I never had occasion to practice. One was live within your means; the other was take responsibility for your actions.

You don't have to answer the question about live within your means. That is a larger problem we all have. But on the issue of taking responsibility for your actions, has this Association in one way or another dealt with recommendations to the Congress or the President on how over the next 10 years we might do that as a society? You have talked about life style and accidents, but up here we deal with food labeling, we deal with mandatory helmet laws, we deal with excise taxes to discourage people from smoking. I am a libertarian. I don't buy into most of that sort of stuff, but I am really, you know—I get so often in this committee hung up between the public health folks that say, you know, ban all the tobacco advertising, make them all wear helmets, blah, blah, blah, and that sort of thing. Then on the other side, you have these other kinds of problems. Advertising, let's ban advertising and so forth.

Have you been able to give some thought and perhaps arrive at some tentative consensus on where as a society we ought to head in this whole business of taking responsibility for your actions? Anybody?

Dr. HENDERSON. Let me take a shot. We don't as an association normally take a position on an issue like this. There is a lot of planning, a lot of thinking, and a lot of activities going on within the Federal Government in which many of us participate, and certainly within our schools and our own communities, there is a lot that goes on in this area. To suggest that we as an association have developed a position is wrong.

I think there is a lot that can be done in promoting health. I really do. I think we all believe that. We have all seen it. And a lot of it involves education and a series of interventions at the beginning at a very young age. There are many different approaches. I believe we are getting much smarter than we were in educating, in motivating, and with social pressure. I think we can do much more in the future.

But our problem is that we trained health professionals are really not numerous as a group. We have a tremendous shortage of trained manpower, and we are in the unique situation of educating people who come back to the schools—as many of them do after working as professionals for a number of years. Our average student is between 30 and 35. It poses a real problem for them to forego a paycheck for a year and pay tuition and subsequently take a job which may pay less than what they were making before the aquired added education.

For a long time we have had support from the Congress for both capitation and for traineeships, but these funds have gradually waned over the years so that we now face some very difficult problems in trying to bring really well-motivated people into the field, and then sending them out into productive work. And yet we see now a growing body of younger people who have a real social conscience and are concerned about these issues and would gladly sacrifice to participate up to a point of starvation, I think.

Senator **Durenberger**. Anyone else want to make an observation on the subject?

Dr. **Kane**. Senator, let me just point out the paradox in our society that it is against the law to kill yourself quickly, but it is not against the law to kill yourself slowly. Schools of public health are trying to try and train people and to develop programs that can make this kind of complicated information about what does make you healthy or less sick available to people across the whole socioeconomic spectrum in this country.

One of the problems that we have when we adopt policies that hold individuals responsible for their behavior is that we tend to reinforce the socioeconomic gradients. Those people at higher socioeconomic levels are more likely to respond to health information than are those at the lower socioeconomic gradients. And this has both a direct and indirect deleterious effect on the country.

While one would not want to inflict one's social values on another group, one also needs to recognize that not doing that may be, in fact, doing exactly that.

Senator **Durenberger**. Dr. Fineberg?

Dr. **Fineberg**. If I may add just a brief word, Senator, I think there were and are disagreements about what might be called more coercive or extreme approaches to trying to influence behavior. But I believe where we can agree as a country is on the importance of education that empowers each individual to make sensible choices for themselves. And on that scale, we barely have gone beyond the zero mark as a Nation.

If you go back to the time when AIDS was starting to spread earlier in this decade, that was around the same time that a major consumer goods company, Procter and Gamble, was introducing a product, new liquid Tide. Now, when they introduced that product, what they were asking people to do when they went to the market and were going to buy a laundry detergent anyway, was to walk down the aisle with their basket, and instead of reaching for their old detergent, to just go a little further to that bright orange bottle and put the new liquid Tide in the basket. That was all they were asking people to do. The whole behavior change that was intended. And for that, in introducing that product, the company invested $35 million.

Today, we have got a wonderful Boston consumer products company, Gillette, introducing a new razor blade around the world, sensor razor, and to introduce that razor, all of us who are shaving anyway are going to have to buy a razor again just to reach a little further down the aisle, they are spending $120 million around the world.

Now, these are very sensible investments. They are good products, and they are achieving the intended effect. But you compare that kind of change to what we are talking about empowering people to make rational choices about their sexual behaviors, about use of drugs, about dealing with a substance that is addictive, like tobacco, and I think it is fair to say that as a country we have barely begun to make the kind of serious investment in education that would genuinely have an impact on a large number of people in a reasonable period of time. That is where I think we are falling short, not appreciating the magnitude of both the opportunity and the problem.

Senator DURENBERGER. Thank you. I have to get out of here so the experts can take over. Outside of hearings like this, I get my best ideas on airplanes. In going back to Minnesota Friday or Saturday for Earth Day, I happened to sit next to this young man from Virginia who was obviously stoned when he got on the plane. His first question was: Where can I smoke? He didn't realize that Northwest Airlines—I could tell he didn't fly very often—invented the smoke-free atmosphere.

But on the way back, I was sitting next to a sustainable agriculture person—and I don't buy all the sustainable agriculture stuff, but he was going through all the sustainable agriculture thing. And I am fresh from Earth Day, and I am very conscious of all of the plastic—Dr. Beasley talked about how protected we are from eating contaminated food. Well, everything from my cookie to my—you know, everything that I got on this dinky little meal that I had in the middle of the afternoon is protected in some way with stuff we can't get rid of.

It got me thinking. I wonder if I could either persuade Northwest—and I guess that couldn't happen. We would have to legislate it. Why don't we ban meals on airplanes on flights of less than 2 hours? I didn't need that meal that I ate.

I got a nice little book from the new head of CDC here in the mail that says what people die from in Minnesota and all that sort of thing, and the main thing they die from is sitting on their duffs all the time. The sedentary life that Americans—I think that was number one, and after that came the lungs and the heart and stuff like that. Would it be too radical if I suggest that we ban eating? I tried it on the flight attendant because I was sure that the flight attendants union would object right away. She said, "No, Senator." She said, "We are here for safety purposes not to feed you."

Anyway, I have statements from Paul Simon and from Carl Levin and from Strom Thurmond and probably before the day is over we will have them from others. I know they have tried to be here and couldn't.

[The prepared statements of Senators Simon, Levin, and Thurmond follow:]

PREPARED STATEMENT OF SENATOR SIMON

Senator SIMON. Mr. Chairman I want to congratulate you on the lead you have taken in holding this hearing commemorating the contributions made by our Nation's schools of public health in the past 50 years.

Health care is in a crisis in our country and the cost of services is reaching its breaking point. We can no longer view the solution to better health care as merely the development of more treatment programs. The only way we will reduce the incidence of diseases is to prevent them. We must work toward preventing diseases and in particular cancer and heart disease. Breast cancer and cervical cancer are two examples of cancers that can be prevented with proper early intervention and detection. The elimination of mammograms for diagnostic purposes from the Catastrophic Act was an action that we should correct immediately. Our Nation's schools of public health have educated our society about the importance of primary prevention and early detection, and I commend them on their work.

I am extremely pleased to introduce Dr. Jacob Brody, dean of the school of public health at the University of Illinois at Chicago. Prior to becoming dean at the University of Illinois, he had an illustrious career in the National institutes of Health. He had published over 200 articles and chapters in books since receiving his medical degree in 1956. He is the recipient of countless awards including an award from the American Medical Writers Association for the best book on a medical subject for physicians.

Dr. Brody has been a leader in the field of health care and the elderly. Finding solutions to problems facing long-term care for an ever increasing population of elderly must be one of our top priorities in the coming period. As Dr. Brody stated in one of his recent articles, "The more we become familiar with the problems with dementia, the anxieties of living alone, and the complications of funding long-term care, the closer we are to a better solution."

I look forward to hearing your testimony today.

PREPARED STATEMENT OF SENATOR THURMOND

Senator THURMOND. Mr. Chairman, I would like to commend you for holding this hearing on the future of schools of public health in the United States. The 24 accredited schools of public health in our country have made significant contributions to the health of our Nation as a whole. I am pleased to be an original cosponsor of the resolution, sponsored by Senator Durenberger, recognizing the 50th annual meeting of the deans of the American schools of public health and the advances that are being made in medical science by these fine institutions.

My State is fortunate to have a school of public health, which is located at the University of South Carolina in Columbia. This school admitted its first class in 1975, and to date has produced over 650 graduates. Degrees are offered by the University of South Carolina School of Public Health in biostatistics, environmental health sciences, epidemiology, health administration, as well as health promotion and education. With the assistance of Federal funding, this relatively new school has been able to attract and retain a distinguished faculty, procure state-of-the-art equipment, conduct community service programs, recruit minorities to the public health profession, and support important research. I am proud of the fine work that this school is doing in training professionals in the field of public health in my State.

Today, this committee will receive testimony from deans of schools of public health on various topics relating to disease prevention and health promotion. It is a pleasure for me to welcome Dr. Winona Vernberg, the dean of the school of public health at the University of South Carolina. Dean Vernberg is an outstanding educator, who is dedicated to improving public health. She will discuss the contributions of academic public health in solving problems in environmental health. I am confident that the members of this committee will benefit from her insight.

The Federal Government has played an important role in supporting schools of public health in the United States. The capitation grant program for schools of public health was one of our Nation's oldest Federal higher education programs. Currently, Federal financial support is continued through the new competitive special projects grants program, that wards grants for projects related to preventive medicine, health promotion, disease prevention, increasing the enrollment of individuals from disadvantaged backgrounds in the public health profession, as well as improving access and quality in health care.

Mr. Chairman, I would like to commend the deans, that are appearing before this committee today, on the progress that has been made in public health through their efforts. Although my schedule will not permit me to remain for the entire hearing, I look forward to reviewing the testimony that is presented by these eminent educators.

PREPARED STATEMENT OF CARL LEVIN, A U.S. SENATOR FROM MICHIGAN

Senator LEVIN. Thank you Mr. Chairman for convening this special hearing today to highlight the impressive contributions of U.S. public health schools in preventing diseases and improving the health status of Americans.

I appreciate your affording me this opportunity to join with you in welcoming one of the witnesses today. She is a constituent of mine and a very dear and personal friend, Dr. June Osborn, dean of the University of Michigan's school of public health and professor of epidemiology, pediatrics and communicable diseases.

Dr. Osborn has served in diverse and indispensible roles of leadership in the development of ways in which to prevent and control AIDS. the State of Michigan, the Nation and the world have been richly blessed by the presence and contributions of Dr. Osborn. She is a woman of honor, intelligence, dignity and grace, and exhibits a commitment to excellence and dedication to her profession. Dr.

Osborn currently heads the 15 member National Commission on AIDS, created by Congress in 1988. She is a member of the Global Commission on Aids of the World health Organization; chairs the National Advisory Committee for AIDS Health Services Project of the Robert Wood Johnson Foundation; and chaired the AIDS Ad Hoc Advisory Committee to the National heart, Lung, and Blood Institute of NIH from 1984 until May 1989. In 1986, Dr. Osborn was elected to membership in the Institute of Medicine of the National Academy of Sciences.

Mr. Chairman, it is my pleasure to introduce Dr. June Osborn, a pioneer in AIDS prevention and control.

Senator **Durenberger**. I want to thank all of you for giving me this opportunity today, and I will turn you over to whoever is in charge of introducing the rest of these gentlemen. This part of the hearing is over.

[Whereupon, at 3:57 p.m., the committee was adjourned subject to the call of the Chair.]

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